



<b>SOLICITATION, OFFER, AND AWARD (Continued)</b> <i>(Construction, Alteration, or Repair)</i>										
<b>OFFER (Must be fully completed by offeror)</b>										
<b>14. NAME AND ADDRESS OF OFFEROR</b> <i>(Include ZIP Code)</i>					<b>15. TELEPHONE NO.</b> <i>(Include area code)</i>					
<div style="border: 1px solid black; height: 40px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 40px;"></div>					<b>16. REMITTANCE ADDRESS</b> <i>(Include only if different than Item 14)</i>  <b>See Item 14</b>					
					<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; width: 45%; padding: 2px;">CODE</div> <div style="border: 1px solid black; width: 45%; padding: 2px;">FACILITY CODE</div> </div>					
<b>17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due.    <i>(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)</i></b>										
<b>AMOUNTS</b>		<b>SEE SCHEDULE OF PRICES</b>								
<b>18. The offeror agrees to furnish any required performance and payment bonds.</b>										
<b>19. ACKNOWLEDGMENT OF AMENDMENTS</b> <i>(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)</i>										
<b>AMENDMENT NO.</b>										
<b>DATE</b>										
<b>20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER</b> <i>(Type or print)</i>					<b>20B. SIGNATURE</b>				<b>20C. OFFER DATE</b>	
<b>AWARD (To be completed by Government)</b>										
<b>21. ITEMS ACCEPTED:</b>										
<b>22. AMOUNT</b>		<b>23. ACCOUNTING AND APPROPRIATION DATA</b>								
<b>24. SUBMIT INVOICES TO ADDRESS SHOWN IN</b> <i>(4 copies unless otherwise specified)</i>				<b>ITEM</b>	<b>25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO</b> <input type="checkbox"/> 10 U.S.C. 2304(c) <input type="checkbox"/> 41 U.S.C. 253(c)					
<b>26. ADMINISTERED BY</b>			<b>CODE</b>		<b>27. PAYMENT WILL BE MADE BY:</b> <b>CODE</b>					
<b>CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE</b>										
<input type="checkbox"/> <b>28. NEGOTIATED AGREEMENT</b> <i>(Contractor is required to sign this document and return _____ copies to issuing office.)</i> Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.					<input type="checkbox"/> <b>29. AWARD</b> <i>(Contractor is not required to sign this document.)</i> Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.					
<b>30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN</b> <i>(Type or print)</i>					<b>31A. NAME OF CONTRACTING OFFICER</b> <i>(Type or print)</i>					
<b>30B. SIGNATURE</b>			<b>30C. DATE</b>		TEL:    EMAIL:			<b>31B. UNITED STATES OF AMERICA</b> BY		<b>31C. AWARD DATE</b>

Section 00010 - Solicitation Contract Form

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY UNDEFINED	UNIT	UNIT PRICE	MAX AMOUNT
0001	Design/Build/Site Adapt Security Upgrade FFP Firm-Fixed Price, Indefinite Delivery Indefinite Quantity (IDIQ) Multiple Award Task Order Contract (MATOC) to provide Design/Build/Site Adapt Security Upgrades for various locations, Afghanistan. The period of performance will be for a term of twelve (12) months. Pricing will be evaluated on a per Task Order basis. FOB: Destination				
				MAX NET AMT	

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY UNDEFINED	UNIT	UNIT PRICE	MAX AMOUNT
0002	DBA insurance FFP DBA insurance will be reimbursed to the contractor on a per task order basis upon presentation of an invoice from Rutherford Insurance. FOB: Destination				
				MAX NET AMT	

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
0003		25,000	Dollars, U.S.		

Minimum Guarantee

FFP

If the Government does not award a Task Order equal to or exceeding the \$25,000 at the time of contract award, the Government will obligate a minimum guarantee \$25,000. The \$25,000 minimum guarantee shall be de-obligated upon award of task orders with a cumulative amount equal to or exceeding \$25,000.

Every time the Government issues a task order during the base period, the minimum guarantee will be reduced by the task order amount, until the entire minimum obligation of the Government has been liquidated. The minimum guarantee will only become payable if the Government does not order at least \$25,000 in goods or services during the base period. Only that portion that has not already been ordered will be payable.

FOB: Destination

---

MAX  
NET AMT

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY	UNIT	UNIT PRICE	MAX AMOUNT
1001 OPTION		UNDEFINED			

Design/Build/Site Adapt Security Upgrade  
FFP

Firm-Fixed Price, Indefinite Delivery Indefinite Quantity (IDIQ) Multiple Award Task Order Contract (MATOC) to provide Design/Build/Site Adapt Security Upgrades for various locations, Afghanistan. The period of performance will be for a term of twelve (12) months. Pricing will be evaluated on a per Task Order basis.

FOB: Destination

---

MAX  
NET AMT

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY UNDEFINED	UNIT	UNIT PRICE	MAX AMOUNT
1002 OPTION	DBA insurance FFP DBA insurance will be reimbursed to the contractor on a per task order basis upon presentation of an invoice from Rutherford Insurance. FOB: Destination				
					MAX NET AMT

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY UNDEFINED	UNIT	UNIT PRICE	MAX AMOUNT
2001 OPTION	Design/Build/Site Adapt Security Upgrade FFP Firm-Fixed Price, Indefinite Delivery Indefinite Quantity (IDIQ) Multiple Award Task Order Contract (MATOC) to provide Design/Build/Site Adapt Security Upgrades for various locations, Afghanistan. The period of performance will be for a term of twelve (12) months. Pricing will be evaluated on a per Task Order basis. FOB: Destination				
					MAX NET AMT

ITEM NO	SUPPLIES/SERVICES	MAX QUANTITY UNDEFINED	UNIT	UNIT PRICE	MAX AMOUNT
2002 OPTION	DBA insurance FFP DBA insurance will be reimbursed to the contractor on a per task order basis upon presentation of an invoice from Rutherford Insurance. FOB: Destination				
					MAX NET AMT

#### INSPECTION AND ACCEPTANCE TERMS

Supplies/services will be inspected/accepted at:

CLIN	INSPECT AT	INSPECT BY	ACCEPT AT	ACCEPT BY
0001	Destination	Government	Destination	Government
0002	N/A	N/A	N/A	Government
0003	N/A	N/A	N/A	Government
1001	Destination	Government	Destination	Government
1002	N/A	N/A	N/A	Government
2001	Destination	Government	Destination	Government
2002	N/A	N/A	N/A	Government

#### CLIN MINIMUM/MAXIMUM QUANTITY AND CLIN VALUE

The minimum quantity(s) and CLIN value(s) for all orders issued against the CLIN(s) on this contract shall not be less than the minimum quantity(s) and CLIN value(s) stated in the following table. The maximum quantity(s) and CLIN value(s) for all orders issued against the CLIN(s) on this contract shall not exceed the maximum quantity(s) and CLIN value(s) stated in the following table.

CLIN	MINIMUM QUANTITY	MINIMUM AMOUNT	MAXIMUM QUANTITY	MAXIMUM AMOUNT
0001				\$45,000,000.00
0002				\$45,000,000.00
0003				\$25,000.00

1001	\$45,000,000.00
1002	\$45,000,000.00
2001	\$45,000,000.00
2002	\$45,000,000.00

#### CLIN DELIVERY/TASK ORDER MINIMUM/MAXIMUM QUANTITY AND CLIN ORDER VALUE

The minimum quantity and order value for the given Delivery/Task Order issued for this CLIN shall not be less than the minimum quantity and order value stated in the following table. The maximum quantity and order value for the given Delivery/Task Order issued for this CLIN shall not exceed the maximum quantity and order value stated in the following table.

CLIN	MINIMUM QUANTITY	MINIMUM AMOUNT	MAXIMUM QUANTITY	MAXIMUM AMOUNT
0001		\$		\$5,000,000.00
0002		\$		\$5,000,000.00
0003		\$		\$25,000.00
1001		\$		\$5,000,000.00
1002		\$		\$5,000,000.00
2001		\$		\$5,000,000.00
2002		\$		\$5,000,000.00

#### DELIVERY INFORMATION

CLIN	DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
0001	POP 15-FEB-2010 TO 14-FEB-2011	N/A	AFGHANISTAN DISTRICT NORTH (AEN) US ARMY CORPS OF ENGINEERS STREET 1, W WAZIR AKBAR KHAN KABUL FOB: Destination	W5J9JE
0002	POP 15-FEB-2010 TO 14-FEB-2011	N/A	(SAME AS PREVIOUS LOCATION) FOB: Destination	W5J9JE
0003	POP 15-FEB-2010 TO 14-FEB-2011	N/A	(SAME AS PREVIOUS LOCATION) FOB: Destination	W5J9JE
1001	POP 15-FEB-2011 TO 14-FEB-2012	N/A	(SAME AS PREVIOUS LOCATION) FOB: Destination	W5J9JE

1002	POP 15-FEB-2011 TO 14-FEB-2012	N/A	(SAME AS PREVIOUS LOCATION) FOB: Destination	W5J9JE
2001	POP 15-FEB-2012 TO 14-FEB-2013	N/A	(SAME AS PREVIOUS LOCATION) FOB: Destination	W5J9JE
2002	POP 15-FEB-2012 TO 14-FEB-2013	N/A	(SAME AS PREVIOUS LOCATION) FOB: Destination	W5J9JE



## Section 00100 - Bidding Schedule/Instructions to Bidders

### CLAUSES INCORPORATED BY REFERENCE

52.214-34	Submission Of Offers In The English Language	APR 1991
52.214-35	Submission Of Offers In U.S. Currency	APR 1991
52.216-27	Single or Multiple Awards	OCT 1995
52.222-23	Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity for Construction	FEB 1999
52.222-24	Preaward On-Site Equal Opportunity Compliance Evaluation	FEB 1999
52.236-28	Preparation of Proposals--Construction	OCT 1997

### CLAUSES INCORPORATED BY FULL TEXT

#### 52.215-1 INSTRUCTIONS TO OFFERORS--COMPETITIVE ACQUISITION (JAN 2004)

(a) Definitions. As used in this provision--

“Discussions” are negotiations that occur after establishment of the competitive range that may, at the Contracting Officer's discretion, result in the offeror being allowed to revise its proposal.

“In writing or written” means any worded or numbered expression which can be read, reproduced, and later communicated, and includes electronically transmitted and stored information.

“Proposal modification” is a change made to a proposal before the solicitation's closing date and time, or made in response to an amendment, or made to correct a mistake at any time before award.

“Proposal revision” is a change to a proposal made after the solicitation closing date, at the request of or as allowed by a Contracting Officer as the result of negotiations.

“Time”, if stated as a number of days, is calculated using calendar days, unless otherwise specified, and will include Saturdays, Sundays, and legal holidays. However, if the last day falls on a Saturday, Sunday, or legal holiday, then the period shall include the next working day.

(b) Amendments to solicitations. If this solicitation is amended, all terms and conditions that are not amended remain unchanged. Offerors shall acknowledge receipt of any amendment to this solicitation by the date and time specified in the amendment(s).

(c) Submission, modification, revision, and withdrawal of proposals. (1) Unless other methods (e.g., electronic commerce or facsimile) are permitted in the solicitation, proposals and modifications to proposals shall be submitted in paper media in sealed envelopes or packages (i) addressed to the office specified in the solicitation, and (ii) showing the time and date specified for receipt, the solicitation number, and the name and address of the offeror. Offerors using commercial carriers should ensure that the proposal is marked on the outermost wrapper with the information in paragraphs (c)(1)(i) and (c)(1)(ii) of this provision.

(2) The first page of the proposal must show--

(i) The solicitation number;

(ii) The name, address, and telephone and facsimile numbers of the offeror (and electronic address if available);

(iii) A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item;

(iv) Names, titles, and telephone and facsimile numbers (and electronic addresses if available) of persons authorized to negotiate on the offeror's behalf with the Government in connection with this solicitation; and

(v) Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(3) Submission, modification, or revision, of proposals.

(i) Offerors are responsible for submitting proposals, and any modifications, or revisions, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that proposal or revision is due.

(ii)(A) Any proposal, modification, or revision received at the Government office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and--

(1) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of proposals; or

(2) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(3) It is the only proposal received.

(B) However, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(iii) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(iv) If an emergency or unanticipated event interrupts normal Government processes so that proposals cannot be received at the office designated for receipt of proposals by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation, the time specified for receipt of proposals will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(v) Proposals may be withdrawn by written notice received at any time before award. Oral proposals in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision at 52.215-5, Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal before award.

(4) Unless otherwise specified in the solicitation, the offeror may propose to provide any item or combination of items.

(5) Offerors shall submit proposals in response to this solicitation in English, unless otherwise permitted by the solicitation, and in U.S. dollars, unless the provision at FAR 52.225-17, Evaluation of Foreign Currency Offers, is included in the solicitation.

(6) Offerors may submit modifications to their proposals at any time before the solicitation closing date and time, and may submit modifications in response to an amendment, or to correct a mistake at any time before award.

(7) Offerors may submit revised proposals only if requested or allowed by the Contracting Officer.

(8) Proposals may be withdrawn at any time before award. Withdrawals are effective upon receipt of notice by the Contracting Officer.

(d) Offer expiration date. Proposals in response to this solicitation will be valid for the number of days specified on the solicitation cover sheet (unless a different period is proposed by the offeror).

(e) Restriction on disclosure and use of data. Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, shall--

(1) Mark the title page with the following legend: This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed--in whole or in part--for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of--or in connection with-- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]; and

(2) Mark each sheet of data it wishes to restrict with the following legend: Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.

(f) Contract award. (1) The Government intends to award a contract or contracts resulting from this solicitation to the responsible offeror(s) whose proposal(s) represents the best value after evaluation in accordance with the factors and subfactors in the solicitation.

(2) The Government may reject any or all proposals if such action is in the Government's interest.

(3) The Government may waive informalities and minor irregularities in proposals received.

(4) The Government intends to evaluate proposals and award a contract without discussions with offerors (except clarifications as described in FAR 15.306(a)). Therefore, the offeror's initial proposal should contain the offeror's best terms from a cost or price and technical standpoint. The Government reserves the right to conduct discussions if the Contracting Officer later determines them to be necessary. If the Contracting Officer determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, the Contracting Officer may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.

(5) The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the proposal.

(6) The Government reserves the right to make multiple awards if, after considering the additional administrative costs, it is in the Government's best interest to do so.

(7) Exchanges with offerors after receipt of a proposal do not constitute a rejection or counteroffer by the Government.

(8) The Government may determine that a proposal is unacceptable if the prices proposed are materially unbalanced between line items or subline items. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more contract line items is significantly overstated or understated as indicated by the application of cost or price analysis techniques. A proposal may be rejected if the Contracting Officer determines that the lack of balance poses an unacceptable risk to the Government.

(9) If a cost realism analysis is performed, cost realism may be considered by the source selection authority in evaluating performance or schedule risk.

(10) A written award or acceptance of proposal mailed or otherwise furnished to the successful offeror within the time specified in the proposal shall result in a binding contract without further action by either party.

(11) If a post-award debriefing is given to requesting offerors, the Government shall disclose the following information, if applicable:

(i) The agency's evaluation of the significant weak or deficient factors in the debriefed offeror's offer.

(ii) The overall evaluated cost or price and technical rating of the successful and the debriefed offeror and past performance information on the debriefed offeror.

(iii) The overall ranking of all offerors, when any ranking was developed by the agency during source selection.

(iv) A summary of the rationale for award.

(v) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

(vi) Reasonable responses to relevant questions posed by the debriefed offeror as to whether source-selection procedures set forth in the solicitation, applicable regulations, and other applicable authorities were followed by the agency.

(End of provision)

#### CLAUSES INCORPORATED BY FULL TEXT

#### 52.215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 1997)—ALTERNATE IV (OCT 1997)

(a) Submission of cost or pricing data is not required.

(b) Provide information described below:

For basic contract: As required by Section 00110 Proposal Preparation Instructions

For Task Orders: As required by the Task Order Request for Proposals

(End of provision)

#### CLAUSES INCORPORATED BY FULL TEXT

#### 52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a Firm-Fixed Price contract resulting from this solicitation.

(End of provision)

#### CLAUSES INCORPORATED BY FULL TEXT

##### 52.233-2 SERVICE OF PROTEST (SEP 2006)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

By Courier or Hand Carry:

U.S. Army Corps of Engineers (USACE)  
Afghanistan Engineer District - North (AEN)  
Qalaa House, Attention: Contracting  
House #1, Street #1,  
West Wazir Akbar Khan (behind Amani High School)  
Kabul, Afghanistan

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

#### CLAUSES INCORPORATED BY FULL TEXT

##### 52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) Site visits may be arranged during normal duty hours by contacting:

Name: **TBD at Task Order Level**

Address:

Telephone:

(End of provision)

#### CLAUSES INCORPORATED BY FULL TEXT

##### 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

FAR: <http://acquisition.gov/far/index.html>

DFARS: <http://farsite.hill.af.mil/VFDFAR1.HTM>

AFARS: <http://farsite.hill.af.mil/VFAFAR1.HTM>

EFARS: <http://www.usace.army.mil/CECT/Pages/EFARS.aspx>

(End of provision

## PROPOSAL PREPARATION

### **SECTION 0110**

#### **PROPOSAL PREPARATION**

##### **1. DEFINITION**

This solicitation is for the award of a Multiple Award Task Order Contract (MATOC) for new construction to include demining, Design-Build/Site Adapt, site assessments, general building renovation, road and pavement repair, and incidental environmental remedial work. The MATOC to be awarded are located through-out Afghanistan that is within the scope of the contract work.

This work includes, but is not limited to, Design-Build/Site Adapt, site assessments, general building renovation, road and pavement repair, and incidental environmental remedial work.

When the word 'Offeror' is encountered throughout this Section 00110, it is intended to mean a company seeking to do business with the Government that submits a proposal in response to this solicitation.

A proposal is documentation prepared by the Offeror and submitted to the Government for evaluation purposes in response to this solicitation.

When the word 'Government' is encountered throughout this Section 00110, it is intended to mean U.S. Army Corps of Engineers Afghanistan District-North (AED-N).

Proposals for this solicitation will be accepted until the date and time indicated on Standard Form 1442. Perspective Offerors should submit inquiries related to this solicitation only in writing by letter or e-mail to:

U.S. Army Corps of Engineers (USACE)

Afghanistan Engineer District-North (AED-N)

Qalaa House, Attention: Julie Meyer

Kabul, Afghanistan

E-MAIL ADDRESS: [Julie.D.Meyer@usace.army.mil](mailto:Julie.D.Meyer@usace.army.mil) AND [Paul.C.Daugherty@usace.army.mil](mailto:Paul.C.Daugherty@usace.army.mil)

Please include the solicitation number, and project title with your questions. Written inquiries must be received by this office not later than four (4) calendar days prior to the date set for receipt of offers. TELEPHONE INQUIRIES WILL NOT BE ACCEPTED.

Oral explanations or instructions are not binding. Any information given to an Offeror which impacts the solicitation and/or offer will be given in the form of a written amendment to the solicitation.

As this is a competitive negotiation acquisition, there is no public bid opening and no information will be given out as to the number of Offerors or the results of the competition until all awards are made.

## **2. DIRECTIONS FOR SUBMITTING PROPOSALS**

Offers must be in sealed envelopes/packages, marked and addressed as follows:

**MARK PACKAGES:**

Solicitation No. **W5J9JE-10-R-0007**

Offer Closing Date: 26 JAN 2010

Offer Closing Time: 4:00 p.m. (LOCAL KABUL TIME)

**ADDRESS PACKAGES TO:**

U.S. Army Corps of Engineers (USACE)

Afghanistan Engineer District-North (AED-N)

Qalaa House, Attention: Julie Meyer

Kabul, Afghanistan

## **3. PREPROPOSAL CONFERENCE / SITE VISIT**

There will be no Preproposal Conference scheduled for this project.

There will be No site visit for this project.

## **4. ELECTRONIC OFFERS**

FAXED PROPOSALS, MODIFICATIONS THERETO, OR CANCELLATIONS WILL NOT BE ACCEPTED.

However, offers may be withdrawn in writing by letter or e-mail. Any written notice to withdraw an offer sent to this office must be received in the office designated in the Request for Proposal (RFP) for receipt of offers not later than the exact date and time set for receipt of proposals.

## **5. PROPOSALS SHALL BE SUBMITTED IN THE FOLLOWING FORMAT:**

### **VOLUME I – Price Proposal and Administrative Submission**

TAB A - The Proposal Cover Sheet

TAB B – Standard Form 1442, completed and signed by authorized individual(s) of the Offeror. Offers submitted in the name of a Joint Venture must be signed in accordance with the terms and conditions specified in the joint venture agreement as evidenced in the proposal.

TAB C – Proposal Pricing Schedule for the Sample Task Order, Schedule 00010

TAB D – Section 00600 – Representations and Certifications.

TAB E – Proposal Data Sheet – Offerors should ensure telephone number; fax number, e-mail address and DUNS number, if available, are all included. DUNS number will be used to access ACCASS and CCASS data. Offerors should also provide any other assigned number that identifies them in the PPIRS database. If a separate DUNS has

been created for a joint venture (J-V) they must be submitted. A DUNS number shall also be provided for each company identified in any other proposed association of firms or Contractor Team Arrangement. The offeror should also submit their Tax ID number on the proposal data sheet.

TAB F – Joint Venture Agreement, if applicable.

## **VOLUME II – Technical Proposal**

TAB F – FACTOR 1-1 Relevant Specialized Experience

TAB G – FACTOR 1-2 Past Performance

TAB H – FACTOR 1-3 Technical

### **SAMPLE TASK ORDER**

TAB I – FACTOR 2-1 Site Specific Management and Security Plan

TAB J – FACTOR 2-2 Site Specific Personnel

TAB K – FACTOR 2-3 Resources

b. Failure to submit these documents may result in rejection of the proposal. The Government will not make assumptions concerning intent, capabilities, or experience. Clear identification of proposal details shall be the sole responsibility of the Offeror. The Government will reject incomplete proposals after initial evaluation without further consideration. Therefore the proposal shall meet the following basic requirements:

## **6. PROPOSAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS**

### **a. REQUIREMENT FOR SEPARATE PRICE AND TECHNICAL PROPOSALS.**

(1) The Proposal shall be typed and submitted in English, and easy to read.

(2) Each Offeror must submit both a Price Proposal and a Technical Proposal. The Price Proposal and the Technical Proposal must be submitted as separate volumes. The outside of each separate volume must be clearly marked to indicate its contents; and the identity of the Offeror. Additionally, clearly identify the “original” cost/price proposal and the “original” technical proposal on the outside cover.

(3) Both the Price Proposal and the Technical Proposal must be received by the closing date and time set for receipt of proposals.

(4) No dollar amounts from the Price Proposal are to be included in the Technical Proposal.

(5) All information intended to be evaluated as part of the Technical Proposal must be submitted as part of the Technical Proposal. Do not cross-reference similar material in the Price Proposal, or vice versa. Also, do not include links to websites in lieu of incorporating information into your proposal.

(6) Do not include exceptions to the terms and conditions of the solicitation in either the technical or price proposal. Should the offer include any standard company terms and conditions that conflict with the terms and conditions of the solicitation, the offer may be determined "unacceptable" and thus ineligible for award. Should the Offeror have any questions related to specific terms and conditions, these should be resolved prior to submission of the offer. Notwithstanding the above, the Offeror must clearly describe in the Proposal Cover Sheet submitted with the Price Proposal any exceptions to the contractual and/or technical terms and conditions of the solicitation contained in the Offer.



(7) Failure to submit attachments or failing to complete them properly will result in rejection of the offer without further evaluation. Therefore, Offerors are urged to follow instructions and speak with the Contracting Officer if instructions are not understood.

b. DISCUSSIONS. The Government **does not** intend to enter into discussions with Offerors prior to determining those contractors within the competitive range, in accordance with FAR 52.215-1, Instructions to Offerors—Competitive Acquisitions.

c. GENERAL INSTRUCTIONS.

(1) Submit only the hard-copy paper documents and the electronic files specifically authorized and/or required elsewhere in this section. Do not submit excess information, to include audio-visual materials, electronic media, etc.

(2) Use only 8 ½ by 11 inch paper for hard copy submissions, unless another paper size is specifically authorized elsewhere in this section for a particular submission. Do not use fold-outs (e.g., 11" x 14" or 11" x 17" sheets) unless specifically authorized in this section for a particular submission. Do not use a font size smaller than 10, an unusual font style such as script, or condensed print for any submission. All page margins must be at least 1 inch wide, but may include headers and footers.

(3) The preferred method for assembling your proposals is to use three-ring binders; however, the use of pressboard or other report covers with compression or other type fasteners is acceptable. Do not use spring clamps or exceed the recommended capacity of the fastener or binder. Do not use plastic multi-hole/spiral binding systems, heat binding systems, or other systems which do not facilitate the ready insertion of additional pages.

(4) "Confidential" projects cannot be submitted to demonstrate capability unless all of the information required for evaluation as specified herein can be provided to the Government as part of the Offeror's technical proposal. Offerors that include in their proposals information they do not want disclosed to the public for any purpose, or used by the Government except for evaluation purposes, must be clearly marked in accordance with the instructions at FAR 52.215-1, "Instructions to Offerors—Competitive Acquisition", paragraph (e), "Restriction on disclosure and use of data".

(5) In the case of an Offeror that is part of a large, multi-segmented business concern, provide information directly pertaining to the specific segment of the business concern (i.e., the division, group, unit, etc.) that will perform work under the prospective contract.

(6) For submissions with page limitations, the pages will be counted as follows: One side of the paper is one page; information on both the back and front of one sheet of paper will be counted as two pages. Where authorized, fold-out pages (11" x 14" or 11" x 17") will count as one page. Pages furnished for organizational purposes only, such as a "Table of Contents" or divider tabs, are not included in the page limitation.

(7) Table of Contents. Each volume of the proposal shall contain a detailed table of contents. If more than one binder is used, the complete table of contents shall be included in each. Any materials submitted but not required by this solicitation (such as company brochures) shall be relegated to appendices.

(8) Binders. Proposals shall be submitted in tabbed, three ring binders. Volume 1 should be comprised of Tabs A-E; Volume Two shall be comprised of Tabs F-K.

(9) Number of Copies: Offerors shall submit an original of Volume One and three (3) hard copies and an original of Volume Two and one (1) hard copy.

## 7. JOINT VENTURES

A company that is part of a Joint Venture must submit a legally binding joint venture agreement. The Government will not evaluate the capability of any contractors that are not included in the Joint Venture agreement. Joint Ventures must include a copy of the legal joint venture signed by an authorized officer from each of the firms comprising the Joint Venture with the chief executive of each entity identified and must be translated into English, if the original agreement is in a language other than English.

If submitting a proposal as a Joint Venture, the experience, past performance, and management approach of each of the Joint Venture Partners can be submitted for the Joint Venture Entity. The experience for each Joint Venture Partner will be considered the experience of the Joint Venture entity. Joint ventures shall submit the following additional documentation regarding their business entities:

- a. A copy of their Joint Venture agreement in English.
- b. A detailed statement outlining the following in terms of percentages, where appropriate.
  - (1) The relationship of the joint venture parties in terms of business ownership, capital contribution, and profit distribution or loss sharing.
  - (2) The management approach of the joint venture in terms of who will conduct, direct, supervise and control the project and have custody and control of the assets of the joint venture and perform the duties necessary to complete the work.
  - (3) The structure of the joint venture and decision-ranking responsibilities of the joint venture parties in terms of who will control the manner and method of performance of the work.
  - (4) Identification of the key personnel having authority to legally bind the joint venture to subcontracts and state who will provide or contract for the labor and materials for the joint venture.
  - (5) Identification of the party maintaining the joint venture bank accounts for the payment of all expenses and the deposits of all receipts, keep the books and records, and pay applicable taxes for the joint venture.
  - (6) Identification of the party furnishing the facilities, such as office supplies and telephone service.
  - (7) Identification of party having overall control of the joint venture.

Other sections of the proposal shall identify, where appropriate, whether key personnel are employees of the individual joint venture parties and identify the party, or hired as employees of the joint venture.

If one of the joint venture parties possesses relevant experience and/or past performance, the experience and/or past performance of that firm will be considered as the experience and/or past performance of the joint venture.

A complete and legally binding document with all the information required under this section titled "Joint Ventures" shall be included.

## SUBCONTRACTORS

If an Offeror wishes to be credited with a subcontractor or supplier, i.e. a firm that is not the prime contractor or part of the joint venture, a letter of commitment signed by the subcontractor and the prime contractor must be submitted. The commitment letter must be submitted even if the firm is in some way related to a joint venture partner (for example, the subcontractor is subsidiary of a joint venture partner, or a subsidiary of a firm to which the joint venture partner is also a subsidiary). If an Offeror submits projects demonstrating experience by a subcontractor, a subsidiary, or a supplier, as opposed to the prime or one of the joint venture partners, the Offeror **MUST** submit a

signed letter of commitment from the contractor who performed and completed the work. *If a letter of commitment is not submitted, the experience will not be considered.*

## **8. SPECIFIC INSTRUCTIONS FOR THE PRICE PROPOSAL**

(1) Number of Sets of the Price Proposal. Submit the ORIGINAL and ONE additional hard copy of the Price Proposal.

(2) Size Restrictions and Page Limits. Use only 8 ½" x 11" pages. There are no page limits set for the price proposal. However, limit your response to information required by this solicitation. Excess information will not be considered in the Government's evaluation.

(3) Format and Contents of the Price Proposal and List of Tabs. The Price Proposal shall be appropriately labeled as such and shall be organized as indicated in the following chart.

<b>TAB</b>	<b>CONTENTS OF THE PRICE PROPOSAL</b>
<b>A</b>	The Proposal Cover Sheet
<b>B</b>	The SF 1442 and Acknowledgement of Amendments (Signed)
<b>C</b>	Section 00010, Pricing Schedule for Sample Task Order
<b>D</b>	Representations, Certifications, and Other Statements of Offerors
<b>E</b>	Proposal Data Sheet
<b>F</b>	JV Agreement, if applicable.

### (4) Detailed Submission Instructions for the Price Proposal

**TAB A:** The proposal cover sheet is required by FAR 52.215-1(2) (c) (i)-(v) and must be submitted by all Offerors. This provision, titled "Instructions to Offerors—Competitive Acquisition," and the format for the proposal cover sheet are furnished elsewhere in this section.

**TAB B:** The SF 1442, Solicitation, Offer, and Award is to be completed by all Offerors and duly executed with an original signature by an official authorized to bind the company in accordance with FAR 4.102. Any and all amendments must be acknowledged by all Offerors in accordance with the instructions on the Standard Form 30, Amendment of Solicitation.

**TAB C:** Section 00010 is to be completed in its entirety by all Offerors. See Sections 00010 with attached notes, for further instructions.

**TAB D:** All Offerors must have electronically completed the annual representations and certifications on the "Online Representations and Certifications Application" (ORCA) website and shall be registered in the CCR database. Offerors are responsible for ensuring that these on-line Representations and Certifications are updated as necessary to reflect changes, but at least annually to ensure that they are kept current, accurate and complete. If the Offeror is a Joint Venture, all participants must separately complete both the ORCA Representations and Certifications. The Offeror will complete all provisions in Section 00600 and will include a print-out of its ORCA record (including DFARS provisions) and its CCR registration.

**TAB E:** If the Offeror is a Joint Venture (JV), include a copy of the JV Agreement. If a JV Agreement has not yet been finalized/approved, indicate its status. JV Agreements must clearly indicate the percentages of the JV participants, in particular the percent of the controlling party, and a clear delineation of responsibilities and authorities between the JV parties.

## **9. SPECIFIC INSTRUCTIONS FOR THE TECHNICAL PROPOSAL**

(1) Number of Sets of the Technical Proposal. Submit the ORIGINAL and THREE (3) additional sets of the written Technical Proposal, with each set separately packaged.

(2) Format and Contents of the Technical Proposal and List of Tabs. The original and all copies of the technical proposal will be appropriately labeled as such. Each set shall be organized using the tabs specified in the following chart. Note: The main tabs directly correlate to the evaluation factors identified in Section 00120.

<b>TAB</b>	<b><i>CONTENTS OF THE TECHNICAL PROPOSAL</i></b>
F - Factor 1-1	RELEVANT SPECIALIZED EXPERIENCE
G- Factor 1-2	PAST PERFORMANCE
H - Factor 1-3	TECHNICAL
I - Factor 2-1	SITE SPECIFIC MANAGEMENT AND SECURITY PLAN (SAMPLE TASK ORDER)
J – Factor 2-2	SITE SPECIFIC PERSONNEL (SAMPLE TASK ORDER)
K – Factor 2-3	RESOURCES

(3) Page Limitations. See paragraphs 6.d.(2) and 6.d.(6) above for format and page count instructions. The following page limitations are established for each factor described above:

- Factor 1-1, Relevant Specialized Experience – Limited to 5 pages (5 forms). Supplemental Narrative is Limited to 2 pages and will not be counted against the five page (5 form) limitation.
- Factor 1-2, Past Performance – Limited to 5 pages (maximum of 5 forms)
- Resources– Limited to 1 page for each resume provided and 3 pages to discuss Capacity
- Factor 1-3, Subfactor A – Management Plan - Limited to 5 pages; Subfactor B – Capacity Development - Limited to 2 pages; Subfactor C – Prompt Payment – Limited to 1 page; Subfactor D – Defense Base Act (DBA) Insurance – Limited to 1 page; Subfactor E – Performance of Work by the Contractor – Limited to 1 page; Subfactor F – Security Plan – Limited to 2 pages.

#### SAMPLE TASK ORDER

- Factor 2-1, Site Specific Management and Security Plan – Limited to 3 pages
- Factor 2-2, Site Specific Personnel – Limited to 1 page per person
- Factor 2-3, Resources - Limited to 3 pages.

Pages submitted which exceed limitations listed above will not be evaluated. Tables of content, proposal cover letters, and tabs between proposal information do not count toward any page limitations in the proposal.

### 10. PROPOSAL FORMAT - VOLUME I – TECHNICAL PROPOSAL

*Submission Requirements:* The Proposal must contain no more than 5 projects as outlined by Attachment Experience Overview Sheet, representing the Contractor's experience performing work required on this solicitation.

#### (i) TAB F-FACTOR 1-1 RELEVANT SPECIALIZED EXPERIENCE

The prime contractor shall demonstrate recent, relevant experience on similar projects, using the Attachment at the end of this section. The Government will evaluate the relevant work experience of the Offeror and their proposed team, including subcontractors, on projects same/similar to that described in this solicitation. The Contractor shall submit a minimum of three (3), but no more than five (5) projects. Of the projects submitted, at least one (1) must be valued at \$1 Million US or higher and the other projects must be at least \$500,000. Projects must have been performed within Afghanistan. These projects are to be underway or completed in the last five (5) years. Offerors with experience on same/similar relevant projects (type of services, similar dollar value, complexity, USACE design / construction requirements, and applicable quality standards) will receive a higher rating than those with dissimilar or non-relevant projects. If the Offeror is a joint venture, each firm shall provide information, demonstrating experience relevant to their role on this project. If any firm has multiple functions or divisions, limit the project examples to those performed by the division, unit or team member submitting the offer.

Offerors shall submit at least three (3) and no more than five (5) Project Information Sheets. Where a project was awarded as a task order or delivery order under an IDIQ type contract, Offerors are cautioned to submit information specific to the instant task or delivery order considered relevant to the requirements of this RFP rather than the umbrella contract. All projects shall be successfully completed, or substantially completed (fully designed and at least 50% construction progress completed) within five (5) years preceding the date of this Solicitation. As a minimum, the Project Information Sheets shall provide; the Project Point of Contact with telephone number, general description, scope, location, cost, and date of completion or anticipated completion date and percent constructed as of the date of the solicitation. For purpose of this Request for Proposal, if the Offeror represents the combining of two or more companies in a Contract Team Arrangement or a Joint Venture, as defined above, the two companies together shall provide no more than five (5) project examples. An integrated design build company will be considered as a single source for the construction aspect as well as the design aspect of the projects and shall provide no more than five (5) project examples. The experience of individuals will not be credited under this factor.

The Offeror shall provide a supplemental narrative (not additional project lists), not to exceed two (2) pages. The narrative should clearly but concisely describe the extent of recent, related experience of the prime contractor and design firms in design and construction. At a minimum the narrative should address; (1) previous experience, (2) previous recent teaming experience among the team members, (3) corporate experience that is not directly related to the specific projects above and how the experience is applicable to this project.

#### (ii) TAB G-FACTOR 1-2 PAST PERFORMANCE

##### SUBMISSION REQUIREMENTS:

Past performance refers to the quality of recent project experience from the owner's perspective. The prime construction contractor and the design firm (or prime contractor if design is to be self-performed) shall each complete and provide a Past Performance Assessment Sheet on three (3) projects, but no more than five (5) projects. The submission of Past Performance Assessment Sheets shall not exceed five pages. The Offeror shall provide clear and adequate information in response to the past performance elements identified on the Attachment at the end of this section. Though not required, ideally project past performance information submitted under this factor would be on the same projects submitted for consideration under Factor 1-1. If any firm has multiple functions or divisions, limit the project examples to those performed by the division, unit or team member submitting the offer. Within page limitations, additional Past Performance Assessment Sheets may be submitted for consideration on any other member of a Teaming Arrangement as defined in paragraph 2.2 that will perform a major or critical aspect of the project. Past performance information submitted on a team member who does not perform a major or critical role on the project or whose role has not been clearly or adequately described as required will not be considered. Projects included on the Past Performance Assessment Sheets shall be successfully completed, or substantially completed (fully designed and at least 50% construction progress completed) within five (5) years preceding the date of this solicitation. The Government may call and confirm information provided by the offeror on the Past Performance Assessment Sheet with the points of contact. The Government reserves the right to interview other individuals if the point of contact is not available.

**Other Sources.** The Government may contact sources other than those provided by the Offeror for information with respect to past performance. These other sources may include but are not limited to: Past Performance Information Retrieval System, other Government sources, and telephone interviews with organizations or individuals familiar with the Offeror's performance. CCASS ratings on all relevant projects submitted by the Offeror under Tab F as well as up to 10 CCASS ratings on relevant projects in accordance with 5.2.3 and 4.1.2 will be considered. ACASS on projects that are relevant in accordance with 5.2.3 and 4.1.2, submitted in Tab F, where the AE firm has designed projects (fully designed and at least 50% construction complete) will be considered.

The past performance of individuals will not be credited under this factor.

### (iii) TAB H—FACTOR 1-3- TECHNICAL

**SUBMISSION REQUIREMENTS:** There are six sub factors associated with this evaluation factor. The six sub factors are Management Plan, Capacity Development, Prompt Payment, Defense Base Act (DBA) Insurance, Performance of Work by the Contractor and Security Plan.

**A. SUBFACTOR A: MANAGEMENT PLAN:** Describe in detail your proposed plan for managing all phases of this project throughout construction execution to completion and project turnover, ensuring you maintain schedule in accordance with the specified performance period. Provide a list of your major subcontractors and the features of work each will accomplish and whether or not you have previously teamed with your firm. Provide a letter of commitment from each subcontractor indicating their availability and intent to perform work on this project and the labor, equipment, and resources they will bring to the project. Provide a Management Organizational Flow Chart, which includes Project Management, Construction, Contractor Quality Control (CQC), and Safety showing lines of authority and responsibilities for each position indicated. Describe your plan to control time during construction of the project and proposed methods to regain schedule should it slip. Discuss how subcontractors will be integrated into the project and how they will be controlled (as it relates to timely completion and quality of work). Provide a general discussion of the project Quality Control Plan (QCP), which specifically addresses how quality will be assured on this project.

**B. SUBFACTOR B: CAPACITY DEVELOPMENT:** The offeror shall provide an Afghan Capacity Development Plan. This plan must demonstrate how the offeror will promote the education and skills development of Afghan citizens. Specifically, the plan must address the following elements, as a minimum. The term "offeror" here includes subcontractors, if applicable.

How the offeror will recruit, hire, train and maintain a staff of skilled Afghan workers for construction trades including, but not limited to: equipment operators, masons, reinforcing steel workers, concrete finishers, laboratory technicians, painters, and carpenters.

- How the offeror will recruit, hire, train and maintain a staff of Afghan journeymen, including but not limited to electricians and plumbers.
- How the offeror will recruit and hire educated Afghans or educate Afghan citizens so that they can assume construction engineering and management positions. These positions will include, but are not limited to safety and health officers, quality control managers, schedulers, cost estimators, construction superintendents, and project managers.
- The name and resume for an Afghan Capacity Development Manager, whose responsibility it will be to manage the capacity development efforts. The person's position within the company organizational chart must be shown.

C. SUBFACTOR C: **PROMPT PAYMENT:** The Offeror must demonstrate how they plan to enforce the prompt payment requirements in accordance with Technical Specification Section 01060 Special Clauses paragraph 2.8 Prompt Payment of Subcontractors.

D. SUBFACTOR D: **DEFENSE BASE ACT (DBA) INSURANCE** The offeror must provide a detailed narrative demonstrating how they intend to meet the DBA Insurance requirements in accordance with Technical Specification Section 01060 Special Clauses paragraph 2.11.

E. SUBFACTOR E: **PERFORMANCE OF WORK BY THE CONTRACTOR:** The offeror must demonstrate how they will achieve the stated percentage of work in accordance with Contract Clause 52.236-1 Performance of Work by the Contractor (Apr 1984).

F. SUBFACTOR F: **SECURITY PLAN:** The Offeror must provide a detailed/comprehensive Security Plan. The plan must demonstrate how the specific requirements documented in Technical Specification Section 01040 Titled: Standard Contract Security will be met.

## **11. SUBMISSION REQUIREMENTS FOR SAMPLE TASK ORDER; LOWEST PRICE TECHNICALLY ACCEPTABLE (LPTA)**

GENERAL PROPOSAL FORMAT FOR SAMPLE TASK ORDER

TAB I – FACTOR 2-1 SITE SPECIFIC MANAGEMENT AND SECURITY PLAN

TAB J– FACTOR 2-2 SITE SPECIFIC PERSONNEL

TAB K- FACTOR 2-3 RESOURCES

(i) TAB I – FACTOR 2-1 SAMPLE TASK ORDER – SITE SPECIFIC MANAGEMENT AND SECURITY PLAN

**SUBMISSION REQUIREMENTS:** This information considers the Offeror's project management and security plan for the type of facilities specified in the RFP. Limit the submission to 3 pages or less; clearly but concisely describe the management and security plan to execute this task order. At a minimum, the narrative should respond to the questions, or address the topics, outlined below:

How does the offeror plan to meet the construction project milestones in the specifications that reflects completion of all work within the period of contract performance.

Provide a narrative response that addresses timely delivery and receipt of equipment/ materials at this job site which coincides with the construction project milestones and provides for protection of equipment and materials to and from the project site.

Explain the plan for providing security for transferring construction materials to the site and how security at the site will be provided.

In addition, the offeror shall include an organizational chart with accompanying clarifying descriptions and explanations that depicts and describes how the various management staff members (to include management staff members employed by subcontractors) assigned for the accomplishment of Task Orders will interact with one another as well as manage and coordinate the activities of the various subcontractors.

(ii) TAB J-FACTOR 2-2 PERSONNEL

SUBMISSION REQUIREMENTS:

The Offeror must provide resume data for the following key personnel:

Project Manager for Design  
Project Manager for Construction  
Safety Officer,  
Quality Control Manager  
Project Scheduler  
Senior Electrical Engineer,  
Senior Mechanical Engineer,  
Senior Civil Engineer,  
Construction Superintendent.

Resume information to be provided shall be limited to no more than one (1) page per person and shall include the following information as a minimum:

- Name and title
- Project assignment
- Name of firm with which associated
- Years experience with this firm and with other firms
- Education degree(s), year, specialization, institution if applicable
- Active professional registration, year first registered, if applicable
- Other experience and qualifications relevant to same/similar work required under this contract

The following key personnel must have degrees in the required disciplines:

- Project Managers – Architectural or Engineering Degree in any discipline
- Senior Electrical Engineer – Electrical Engineering Degree
- Senior Mechanical Engineer – Mechanical Engineering Degree
- Senior Civil Engineer – Civil Engineering Degree
- Project Scheduler – Degree in any engineering discipline or four year Construction Management degree

ALL key personnel shall have a minimum of five (5) years of professional experience in their field. For example, a Civil Engineer must have a degree in Civil Engineering and a minimum of five (5) years of professional civil engineering experience.



(iii) TAB K-FACTOR 2-3 RESOURCES

**FACTOR 2-3. Resources:** The Offeror will submit a list of ALL current ongoing contracts or projects. The list shall include the contract number, contract amount, award date, original contract completion date, current official contract completion date, and the current progress.

The Offeror shall identify the key personnel assigned to each of those projects delineated for each of the current contracts or projects. Identify the personnel used on other contracts concurrently and list those projects.

The Offeror shall provide a narrative that satisfactorily explains how they are going to assume the responsibility for this additional contract or project as well as an explanation of the resources they will use on this contract without adversely affecting current contract or projects. The Offerors narrative shall not exceed 3 pages.

## **12. PROPOSAL FORMAT - VOLUME II PRICE PROPOSAL**

**Submission Requirements:** The following Administrative requirement shall be submitted at the same time as the submission of the Technical Proposal (Volume 1).

Information to be provided in Volume II:

- (a) Offerors shall submit a completed Bidding Schedule, containing the Contractor determined Prices.
- (b) The Offer (SF 1442) duly executed with an original signature by an official authorized to bind the company.
- (c) Acknowledgement of all amendments to the solicitation in accordance with the instructions on the Standard Form 30 (amendment form).
- (d) Section 00600 "Representations and Certifications" fully completed.
- (e) The name, address, telephone and cell phone numbers, e-mail addresses of the Point(s) of Contact with the authority to legally bind the Contractor.
- (f) Name, Address, DUNS, CAGE, and TAX Identification Number of the Contractor submitting the proposal.

### **FACTOR 3 – PRICE**

Contractor's prices shall contain all costs, in addition to those contained in the Bidding Schedule that is part of this solicitation. Prices shall represent costs (indirect and direct costs) including profit. The Contractor's prices shall contain all Contractor's costs inclusive of profit, all overhead (to include office and field overhead), labor burden, insurance, adjustments to listed prices, general and administrative expenses, subcontractor mark-up, mobilization and demobilization, and all other costs including, but not limited to, compliance with environmental laws, permits, preparation of reports, correspondence and documentation required by law or these specifications, tax laws, protection and/or moving of government property and engineering services. (Engineering services include those services that are incidental to construction, and completing submittals for construction work.) The prices shall also include costs necessary to interface with Government representatives, and coordination with occupants and other contractors as necessary. For more information see the Summary of Work.

**COST/PRICE PROPOSAL EVALUATION.** An initial price analysis will be conducted on the offeror's prices using techniques pursuant to FAR 15.404-1(b) and in accordance with the solicitation. The total contract price of each offeror will be compared to that of other offerors received in response to the solicitation and to the Independent Government Estimate for the sample task order. As part of the analysis of overall prices, the Government will perform a realism analysis for the purpose of measuring each offeror's understanding of the requirements and to assess the risk inherent in an offeror's proposal. Total prices that are either 25% or more below the Independent Government Estimate or 25% or more below the average of all offers received may be considered to be unrealistically low for the work to be performed and to indicate a lack of understanding

of the requirement and to present an unacceptable performance risk. Overall prices that are either 25% or more above the Government Estimate or 25% or more above the average of all prices received in response to the solicitation will be considered to be unreasonably high. Proposals with total prices that fail this initial price analysis may not be considered further because they are ineligible for award under the criteria of the solicitation as either unrealistic or as unreasonable.

### 13. PROPOSAL COVER SHEET

<p style="text-align: center;"><i>PROPOSAL COVER SHEET</i></p> <ol style="list-style-type: none"><li>1. Solicitation Number:</li><li>2. The name, address, and telephone and cell phone numbers of the Offeror (and electronic address if available):</li><li>3. A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation and agreement to furnish any or all items upon which prices are offered at the price set opposite each item. Statement to include any exceptions in technical or cost/price proposal or exceptions inherent in Offeror's standard terms and conditions.</li><li>4. Names, titles, and telephone and cell phone numbers (and electronic addresses if available) of persons authorized to negotiate on the Offeror's behalf with the Government in connection with this solicitation:</li><li>5. Name, title, and <u>signature</u> of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.</li></ol>
--

**14. SAMPLE TASK ORDER SOURCE SELECTION USING THE LOWEST-PRICED, TECHNICALLY ACCEPTABLE PROCESS.** An evaluation for acceptability will be performed on each proposal for the sample task order in accordance with FAR 15.101-2(b). The proposal that provides the lowest price and is otherwise technically acceptable in all factors will be selected for award of the sample task order. To be considered technically acceptable, no technical factor in the proposal may be determined to be unacceptable. The failure of a proposal to meet any of the factors will result in a technically unacceptable rating and preclude award of the sample task order. See also Section 00120

**EXPERIENCE INFORMATION**

**(To be completed by Contractor)**

**1. Contractor:  
Name:**

**Address:**

**2. Contract /Task Order(TO) /Purchase Order (PO)  
Number:**

**3. Contract/TO/PO Dollar Value:**

**4. Contract/TO /PO Status:** ☐ Active ☐ Complete

**Completion Date (w/ extensions):**

**5. Project Title:**

**Location:**

**6. Project Description:**

**PAST PERFORMANCE**

**(To be completed by Contractor)**

<b>1. Contract /Task Order(TO) /Purchase Order (PO) Number:</b>
---

<b>2. Contract/TO/PO Dollar Value:</b>
--

<b>3. Project Title:</b>
--------------------------

<b>Location:</b>	
------------------	--

**Was Project Completed on Schedule and withing cost?**

**4. If No Please provide a brief synopsis on corrective actions that were taken:**

**Name:** \_\_\_\_\_

**Address:**

**Telephone Number and E-mail:**

[illegible]

## SECTION 0120

### PROPOSAL EVALUATION AND MATOC CONTRACT AWARD

1. **ELIGIBILITY FOR CONTRACT AWARD.** In accordance with the FAR, no contract shall be entered into unless the contracting officer ensures that all requirements of law, executive orders, regulations, and all other applicable procedures, including clearances and approvals, have been met. This includes the FAR requirement that no award shall be made unless the contracting officer makes an affirmative determination of responsibility. To be determined responsible, a prospective contractor must meet the general standards in FAR Part 9 and any special standards set forth in the solicitation.

The Government will use the Trade Off methodology to make a Best Value Decision to award the MATOC. (see Federal Acquisition Regulation (FAR) 15-101-1) A Sample Task Order will be used to evaluate price and the methodology used for the sample task order will be the Lowest Price Technically Acceptable (LPTA). (see Far 15-101-2).

2. **SOURCE SELECTION USING BEST VALUE EVALUATION STANDARDS.** Evaluation factors will be rated using adjectival descriptions of Outstanding, Above Average, Satisfactory, Marginal, and Unsatisfactory. See paragraph 6 below for Definitions. The Government will apply the appropriate adjective to each factor rated. The Government will establish that the Offeror's submittal meets the adjectival descriptions. As each factor is evaluated an assessment of Performance Risk will be made. Performance Risk relates to the assessment of an Offeror's present and past work and accomplishments to determine the Offeror's ability to successfully perform as required.

In order to determine which proposal(s) represent the best value; the Government will compare proposals to one another. The Government will award a contract to the responsible Offeror whose non cost submittal and price proposal contains the combination of those criteria described in this document offering the best value to the Government. Best value will be determined by a comparative assessment of proposals against all source selection criteria in this RFP.

3. An evaluation for acceptability will be performed on each proposal for the sample task order in accordance with FAR 15.101-2(b). The proposal that provides the lowest price and is otherwise technically acceptable in all factors will be selected for award of the sample task order. To be considered technically acceptable, no technical factor in the proposal may be determined to be unacceptable. The failure of a proposal to meet any of the factors will result in a technically unacceptable rating and preclude award.

### BASIS FOR AWARD

The Government intends to make up to three awards for participation in the MATOC Contract. The MATOC Contract award will be made to the offerors' whose proposals are technically acceptable and represents the **best overall value** to the Government. Offerors will be evaluated on their ability to handle multiple projects at multiple sites and proposals shall be evaluated using the criteria below for the basic contract and the Gardez Security Upgrade Task Order in order to assess strengths, weaknesses, and associated risks and deficiencies. The tradeoff process of evaluation between non-cost/price and cost/price aspects of the offerors' proposals will be used to determine those offers that may result in award of a contract. Implicit in the Government's evaluation and selection process is its willingness to accept other than the lowest priced offers. The initial selection of the three companies that shall participate in the MATOC Contract shall be based on, BEST VALUE. The Sample Task Order and Subsequent task orders

that follow under this IDIQ Contract shall be awarded based on “LOWEST PRICE TECHNICALLY ACCEPTABLE” to one of the three prequalified IDIQ Contractors.

#### **4. EVALUATION PROCEDURE**

a. Price will be evaluated and considered but will not be scored. The proposed prices will be analyzed for reasonableness. They will also be analyzed to determine whether they are realistic for the work to be performed, reflect a clear understanding of the requirements, and are consistent with the information provided by the Offeror. Additionally, all offers will be analyzed for unbalanced pricing.

b. The otherwise technically-acceptable, lowest-priced offeror may be required to confirm its price on a Contract Line Item (CLIN), element, or total price basis, and/or provide additional information in support of their price, prior to contract award at the Government’s request and discretion.

c. Other Award Factors: The Contracting Officer shall consider several factors in the selection process which are important, but not quantified, such as:

(1) Agreement by the offeror to all general and special contract provisions and clauses.

(2) Determination of responsibility of the contractor by the Contracting Officer in accordance with the provisions of the Federal Acquisition Regulation, Part 9.1. In order to be determined responsible, a prospective contractor must:

(a) Have adequate financial resources to perform the contract or the ability to obtain them.

(b) Be able to comply with the required or proposed delivery or performance schedule taking into consideration all existing commercial and Governmental business commitments.;

(c) Have a satisfactory performance record.

(d) Have a satisfactory record of integrity and business ethics.

(e) Have the necessary organization, experience, accounting and operational controls, and technical skills, or the ability to obtain them.

(f) Have the necessary production, construction, and technical equipment and facilities, or the ability to obtain them.

(g) Be otherwise qualified and eligible to receive an award under applicable laws and regulations.

#### **6. BEST VALUE EVALUATION STANDARDS.**

6.1 Evaluation factors will be rated using the following adjectival descriptions. Evaluators will apply the appropriate adjective to each factor rated. As each factor is evaluated an assessment of Performance Risk will be made. Performance Risk relates to the assessment of an Offeror's present and past work and accomplishments to determine the Offeror's ability to successfully perform as required.

6.2 OUTSTANDING - No doubt exists that the Offeror will successfully perform the required effort based on their performance record. The proposal has exceptional merit and reflects an excellent approach which will clearly result in the superior attainment of all requirements and objectives. The proposal contains no significant weaknesses, deficiencies or disadvantages and presents very low risk that it will not be

successful. This clearly achievable approach includes numerous advantageous characteristics of substance, and essentially no disadvantages, which can be expected to result in outstanding performance. The risk of unsuccessful performance is very low as the proposal provides solutions which are unquestionably feasible and practical. These solutions are further considered very low risk in that they are exceptionally clear and precise, fully supported, and demonstrate a clear understanding of the requirements.

6.3 ABOVE AVERAGE - Little doubt exists that the Offeror will successfully perform the required effort based on their performance record. The proposal demonstrates a sound approach which is expected to meet all requirements and objectives and exceed some. Any weaknesses noted in the proposal are minor and should not seriously affect the Offeror's performance and presents low risk that it will not be successful. This sound approach includes advantageous characteristics of substance, and few relatively minor disadvantages, which collectively can be expected to result in above average performance. The risk of unsuccessful performance is low as the proposal contains solutions which are considered feasible and practical. These solutions are further considered to reflect low risk in that they are clear and precise, reasonably supported, and demonstrate an understanding of the requirements.

6.4 SATISFACTORY - Some doubt exists that the Offeror will successfully perform the required effort based on their performance record. If the Offeror has no record of relevant past performance upon which to base a meaningful performance risk prediction, this rating will be assigned for Past Performance. The proposal demonstrates an approach which is capable of meeting all requirements and objectives. The Offeror may satisfactorily complete the proposed tasks, but there is at least a moderate risk that it will not be successful. The approach includes both advantageous and disadvantageous characteristics of substance, where the advantages are not outweighed by the disadvantages. Collectively, the advantages and disadvantages are likely to result in acceptable performance. The risk of unsuccessful performance is moderate, as the proposal solutions are generally feasible and practical. These solutions are further considered to reflect moderate risk in that they are somewhat clear and precise, partially supported, and demonstrate a general understanding of the requirements.

6.5 MARGINAL - Significant doubt exists that the Offeror will successfully perform the required effort based on their performance record. The proposal demonstrates an approach which may not be capable of meeting all requirements and objectives. The Offeror may satisfactorily complete the proposed tasks, but there is a high risk that it will not be successful. The approach has disadvantages of substance and advantages, which if they exist, are outweighed by the disadvantages. Collectively, the advantages and disadvantages are not likely to result in satisfactory performance. The risk of unsuccessful performance is high as the proposal contains solutions which may not be feasible and practical. These solutions are further considered to reflect high risk in that they lack clarity and precision, are generally unsupported, and do not demonstrate a complete understanding of the requirements.

6.6 UNSATISFACTORY - It is extremely doubtful that the Offeror will successfully perform the required effort based on their performance record. The proposal demonstrates an approach which will very likely not be capable of meeting all requirements and objectives. In terms of a specific factor, the Offeror fails to meet the minimum requirements and there is unacceptably high risk that it will not be successful. This approach has numerous disadvantages of substance, and advantages which, if they exist, are far outweighed by disadvantages. Collectively, the advantages and disadvantages will not result in satisfactory performance. The risk of unsuccessful performance is very high as the proposal contains solutions which are not feasible and practical. The solutions are further considered to reflect very high

risk in that they lack any clarity or precision, are unsupported, and do not demonstrate an understanding of the requirement.

## **7. RELATIVE IMPORTANCE OF EVALUATION FACTORS**

7.1 All evaluation factors other than cost or price, when combined, are more important than cost or price.

### **7.2 NON-COST FACTORS/BEST VALUE**

- **FACTOR 1-1: RELEVANT SPECIALIZED EXPERIENCE:** This factor is approximately equal to Factors 1-2 and 1-3.
- **FACTOR 1-2: PAST PERFORMANCE:** This factor is approximately equal in importance to Factor 1-1 and 1-3
- **FACTOR 1-3: TECHNICAL NARRATIVE:** This factor is approximately equal in importance to Factor 1-1 and 1-2.

**8. PRICE** - Sample Task Order (Gardez Security Upgrade Project) will be utilized to evaluate price.

## **9. PROPOSAL EVALUATION CRITERIA**

### **9.1 TAB F-FACTOR 1-1 RELEVANT SPECIALIZED EXPERIENCE**

#### **EVALUATION CRITERIA**

- 9.1.1 The Government will evaluate the extent of recent, related experience of the prime contractor and design firms in design and construction projects. The Government may place greater importance on projects performed as a prime contractor than as a subcontractor, depending upon overall role and relevancy of the project. Federal Government project experience will not be rated inherently more important than non-Federal Government project experience.
- 9.1.2 The Government reserves the right to verify the experience record of cited projects or other recent projects by reviewing the Corps of Engineers Construction Contractor (or Architect-Engineer) Appraisal Support System (CCASS/ACASS), other DOD or Government appraisal systems or by contacting owners or references. The Government may check any or all cited references to verify supplied information.
- 9.1.3 The relevant experience of key personnel proposed for this project will not be evaluated or considered under this factor.
- 9.1.4 If the Offeror cannot provide information concerning recent, relevant experience on similar projects or the Offeror has no relevant experience, a determination will be made as to the risk this lack of experience presents to the Government and the Offeror will be given an appropriate rating for this factor.

### **9.2 TAB G-FACTOR 1-2 PAST PERFORMANCE**

#### **EVALUATION CRITERIA:**

- 9.2.1 The Government will evaluate the Offeror's past performance using the sources available to it including but not limited to: the example projects identified by the Offeror and submitted on the Past Performance Assessment Sheets and any additional information received from references, ACASS, and CCASS. Offerors may be provided an opportunity to address any negative past performance



- information about which the Offeror has not previously had an opportunity to respond if such information is determined to present an impact on the rating to be assessed.
- 9.2.2 The Government will consider past performance of the prime construction contractor and the design firm, (or the prime contractor if design is to be self-performed). If a firm has multiple functions or divisions, the Government will only evaluate the past performance of the unit or division submitting the offer. The Government may also consider the past performance information submitted on any other team member. However the consideration and weight given to past performance information concerning other than the prime contractor will be based on the extent of involvement of the team member in the project and the adequacy of the proposal in identifying and addressing such arrangements and roles. Past performance information submitted on a team member who does not perform a major or critical role on the project or whose role has not been clearly or adequately described as required will not be considered
- 9.2.3 The Government will consider relevant projects that are successfully completed, or substantially completed (fully designed and at least 50% construction progress completed) within 5 years preceding the date of the solicitation. The Government will consider the currency and relevance of the information, source of the information, context of the data, and general trends in contractor performance. The Government places higher value on projects for which successful performance can be validated by means other than the offeror's self-assessment such as through independent telephone interviews with points of contact identified in the proposal, CCASS/ACCASS or other agency performance databases, Offeror furnished references or personal knowledge. The Government places a higher value on projects which provided particularly difficult or unique challenges and the innovative methods the Offeror used to resolve problems successfully.
- 9.2.4 The Government will evaluate past performance based on the elements listed below:
- 9.2.5 Quality of Construction and Design. The Government will evaluate all information available with respect to the quality of the actual construction and design undertaken and the standards of workmanship exhibited by the Offeror.
- 9.2.6 Timeliness of Performance. The Government will evaluate all information available with respect to the completion of projects within the scheduled completion times.
- 9.2.7 Customer Satisfaction. The Government will evaluate all information available with respect to customer satisfaction, cooperation with customers, and interaction on past projects.
- 9.2.8 Subcontractor Management. The Government will evaluate all information available with respect to effective management of subcontractors on past projects.
- 9.2.9 Safety. The Government will evaluate all information available with respect to the contractor's safety program or efforts.
- 9.2.10 If the Government does not obtain past performance information for the projects identified by the Offeror and cannot establish a past performance record for the Offeror through other sources, past performance will be rated neither favorably nor unfavorably.

## **10. TAB H—FACTOR 1-3- TECHNICAL**

There are six sub factors associated with this evaluation factor. The six sub factors are Management Plan, Capacity Development, Prompt Payment, Defense Base Act (DBA) Insurance, Performance of Work by the Contractor and Security Plan.

### **10.1SUBFACTOR A: MANAGEMENT PLAN**

EVALUATION CRITERIA:

- 10.1.1 The Government will review offeror's proposed plan for managing all phases of the project verifying his intent to complete the project on schedule. The offeror must provide a list of its major subcontractors (if any) and the specific work each will accomplish. The contractor must state whether or not he has previously teamed with a specific subcontractor and they successfully completed the work on time. If subcontractors are listed the contractor must provide a letter of commitment from each subcontractor indicating their availability and intent to perform work on the project. The offeror must provide a Management Organizational Flow Chart, which includes detailed information concerning Project Management, Construction, CQC, and Safety. The chart must clearly indicate lines of authority and responsibilities for each of the positions indicated. The offeror must describe his plan to control time during construction to meet the project completion date and specify methods to be used in an effort to regain schedule should it slip. The contractor must discuss how subcontractors will be integrated into the project and how they will be controlled (as it relates to timely completion and quality of work). The offeror must provide a general discussion of his project Quality Control Plan (QCP), specifically addressing how quality will be assured on the project. All elements must be included in the plan in order to receive an acceptable rating for this subfactor.
- 10.1.2 Offerors are cautioned that the management plan narrative shall not exceed five (5) pages and that Government evaluators will review and evaluate only the information contained on the first ten pages.

## **10.2 SUBFACTOR B: CAPACITY DEVELOPMENT**

### **EVALUATION CRITERIA**

- 10.2.1 The Government will review the offeror's proposed plan to see determine if it demonstrates how the offeror will promote the education and skills development of Afghan citizens. Specifically, the plan must demonstrate the following:
- How the offeror will recruit, hire, train and maintain a staff of skilled Afghan workers for construction trades including, but not limited to: equipment operators, masons, reinforcing steel workers, concrete finishers, laboratory technicians, painters, and carpenters.
  - How the contractor will recruit, hire, train and maintain a staff of Afghan journeymen, including but not limited to electricians and plumbers.
  - How the offeror will recruit and hire educated Afghans or educate Afghans citizens so that they can assume construction engineering and management positions. These positions will include, but are not limited to safety and health officers, quality control managers, schedulers, cost estimators, construction superintendents, and project managers.
  - The name and resume for an Afghan Capacity Development Manager whose responsibility it will be to manage the capacity development efforts. The person's position within the company organizational chart must be shown.
- 10.2.2 Offerors must demonstrate that they have an achievable plan to achieve all of the requirements listed above to receive an acceptable rating for this subfactor.

### **10.3 SUBFACTOR C: PROMPT PAYMENT**

#### **EVALUATION CRITERIA**

- 10.3.1 The government will review the offeror's description of how they will ensure the prompt payment of all subcontractors, suppliers, and their employees in accordance with local Afghan laws and the requirements specified in Technical Specification Section 01060 Special Clauses paragraph 2.8 Prompt Payment of Subcontractors. Offerors must demonstrate how they will meet their payment responsibility as a prime contractor and ensure all subcontractors, suppliers, and all employees are promptly paid in a timely manner to receive an acceptable rating for this subfactor.

### **10.4 SUBFACTOR D: DEFENSE BASE ACT (DBA) INSURANCE:**

#### **EVALUATION CRITERIA**

- 10.4.1 The government will review offeror's description of how they will properly submit a claim, to include necessary actions / preparations to gather contact information for the injured / deceased family, and both the notification and follow up processes to facilitate replacing the lost income of the worker. The government will also review the proposed process for immediate and required follow-on reports being submitted in a timely manner to the appropriate individuals in accordance with the DBA Insurance requirements specified in Technical Specification Section 01060 Special Clauses paragraph 2.11. The offer's process must demonstrate how the requirements will be met to receive an acceptable rating for this subfactor.

### **10.5 SUBFACTOR E: PERFORMANCE OF WORK BY THE CONTRACTOR:**

#### **EVALUATION CRITERIA**

- 10.5.1 The government will review the offeror's description of how they will achieve the stated percentage of work in accordance with the contract clause, by either self performing specific features of work, providing materials to be incorporated in the works, providing a list of owned equipment to be charged against the project to meet the percentage identified in Contract Clause 52.236-1 Performance of Work by the Contractor (Apr 1984). The offeror must demonstrate how the required percentage of work will be met to receive an acceptable rating for this subfactor.

### **10.6 SUBFACTOR F: SECURITY PLAN:**

#### **EVALUATION CRITERIA**

- 10.6.1 The government will review the offeror's security plan describing how they will meet the specific requirements found in Technical Specification Section 01040 Standard Contract Security. In the plan, offerors must demonstrate that they will meet each of the requirements to receive an acceptable rating for this factor.

## **11. SAMPLE TASK ORDER EVALUATION CRITERIA**

(Will be evaluated as LOWEST PRICE TECHNICALLY ACCEPTABLE (LPTA))

#### **EVALUATION CRITERIA**

- 11.1 SAMPLE TASK ORDER EVALUATION CRITERIA. Task Order for Gardez Security Upgrades will be used to evaluate price for the MATOC award. If an Offeror's proposal is acceptable, the Offeror's price proposal will be used as an evaluation factor in the Best Value determination.

- 11.2 Sample Task Orders will be evaluated using the LPTA methodology per FAR 15.101-2. Proposals, which satisfy the technical requirements of the Sample Task Order RFP will be determined technically acceptable and given a “GO”. Proposals that fail to satisfy the evaluation criteria will be given a “NO GO”. Proposals that receive a “NO GO” for any factor will not be acceptable making them unacceptable for the price factor and ineligible for a MATOC award.

## **12. TAB I – FACTOR 2-1- SITE SPECIFIC MANAGEMENT AND SECURITY PLAN**

### **EVALUATION CRITERIA**

- 12.1 The Government will evaluate each offeror’s planned approach for successfully managing this task order in Afghanistan. Significant participation by subcontractors in the management of the project work should also be fully and completely described.
- 12.2 The Government will evaluate the offeror’s plan to mitigate any areas of special concern for its overall effectiveness.
- 12.3 The security plan will be evaluated for reasonableness, risk and logic which illustrate a basic understanding of managing security in Afghanistan.
- 12.4 Failure to meet the standards under this factor may result in a “NO GO” or unacceptable rating and possible elimination from further consideration for contract award.
- 12.5 Offerors are cautioned that the Site Specific Management and Security Plan shall not exceed three (3) pages and that Government evaluators will review and evaluate only the information contained on the first three pages.

## **13. TAB J-FACTOR 2-2 PERSONNEL**

### **EVALUATION CRITERIA**

- 13.1 The Safety Officer, Quality Control Manager, Security Manager, and the Construction Superintendent, are not required to have degrees, however, they must have a minimum of 5 years experience in their field. The Project Manager – Design, Project Manager – Construction, Electrical Engineer, Mechanical Engineer, Civil Engineer shall have a degree in the field of work governed by the position they are assigned to and a minimum of five 5 years of professional experience in that field. For example, a Civil Engineer must have a degree in Civil Engineering and 5 years of professional engineering. The degree requirement must be clearly defined by providing the name of the school and type of degree.
- 13.2 Failure to meet the standards under this factor will result in a “NO GO” or unacceptable rating and possible elimination from further consideration for contract award

## **14. TAB K-FACTOR 2-3 RESOURCES**

### **EVALUATION CRITERIA**

- 14.1 Offerors who demonstrate that they have the reserve resources/capacity for additional contracts or projects without adversely affecting existing projects or contracts will receive a “GO”.
- 14.2 Offerors are cautioned that the Resources narrative shall not exceed three (3) pages and that Government evaluators will review and evaluate only the information contained on the first three pages

**15. EXCEPTIONS.**

Exceptions to the contractual terms and conditions of the solicitation (e.g., standard company terms and conditions) may result in a determination to reject a proposal.

**16. RESTRICTIONS.**

Failure to submit all the data in the format indicated in this section may be cause for determining a proposal incomplete and, therefore, not considered for evaluation, and for subsequent award.

**GENERAL TECHNICAL CRITERIA**

- a. Material omission(s) may cause the technical proposal to be rejected as unacceptable.
- b. Proposals which are generic, vague, or lacking in detail may be considered unacceptable. The offeror's failure to include information that the Government has indicated should be included may result in the proposal being found deficient if inadequate detail is provided.
- c. The Government cannot make award based on a deficient offer. Therefore, receipt of an unacceptable or marginal determination of acceptability for any factor or subfactor will make the offer ineligible for award, unless the Government elects to enter into discussions with that Offeror and all deficiencies are remedied in a revised proposal.

**SECTION 00150**  
**SECTION 00150**

**THE SITE-ADAPT DESIGN PROCESS**

**GENERAL**

The Contractor shall complete all work as shown in the furnished drawings and specifications without deviation, unless site conditions or Task Order requirements mandate deviations. Where deviations from, or additions to, the furnished drawings and specifications, are required, the Contractor shall design and prepare drawings, sketches and specifications necessary to "site-adapt" the contracted work. Site-adapt work shall achieve the initial intent of the task order, drawings and specifications provided. Unless otherwise specifically noted in the task order, site-adapt design efforts shall be limited to work which must deviate from or supplement the drawings and specifications initially provided. Site-adapt work is to be considered incidental and necessary and shall be considered to be part of the overall scope of contracted services to be performed by the Contractor in order to deliver a complete product. All references to design in this and other sections of this contract refer to site-adapt efforts.

**SITE-ADAPT PROCESS**

The construction and all necessary site-adapt work shall be designed and built by a single contractor. The

contractor may be a single firm or a team of firms that includes registered Architects and Engineers either employed by or subcontracted to the contractor. Licensing jurisdiction of Architects and Engineers of record shall be verifiable. The contractor shall be the Architect/Engineer-of-Record, whether the contractor utilizes services of licensed architects and engineers employed by its firm or subcontracts with independent architectural and/or engineering firm(s). The contractor shall be solely liable for design errors and/or omissions and should be insured as the A-E firm against design errors and omissions.

## **RFP DOCUMENTS**

Section 00555, SITE-ADAPT DESIGN CONCEPT DOCUMENTS identifies project documents furnished herewith to be used as the basis for the project work. **The Contractor shall complete all work as shown in these furnished drawings and specifications without deviation, unless site conditions mandate changes (larger building foundations per geotechnical investigations, etc.). The contractor shall notify the COR when site-adapt work is necessary and shall follow all procedures and submittal requirements outlined in Section 01335 for the site-adapt work. Unless otherwise noted in the Task Order, design submittals should only address Contract requirements not shown on plans and specifications already furnished to the Contractor as part of this contract. Plans and specifications furnished to the Contractor shall NOT be included as part of any Design Submittal.**

## **OUTLINE DESCRIPTION OF THE SITE-ADAPT DESIGN PHASE**

Work associated with drawings and specifications which is not affected or related to site-adapt work shall be executed in accordance with the schedule provided in the RFP or the COR. No site-adapt work, including in-scope work which is affected by site-adapt work, can begin until authorized by the COR or an authorization Clearance for construction for that phase is issued.

## **PROPOSAL PHASE**

- a. The Proposal Phase includes the period from the time from the issuance of the Request for Proposals (RFP) through the selection process and the final award of the contract.
- b. The proposals to be submitted include a Management/Technical Proposal and a Cost/Price Proposal. The contents and organization of the proposal is described in SECTION 00110 - PROPOSAL PREPARATION. The Government will evaluate and make up to five awards for participation in the IDIQ-MATOC Contract. Awards will be made to the offerors whose proposals are determined to be technically acceptable and offer the best value to the government based upon the criteria which are outlined in SECTION 00120 - PROPOSAL EVALUATION AND CONTRACT AWARD. Of the five successful IDIQ contractors, one contractor may be awarded the Gardez Task Order.

## **DESIGN PHASE**

The successful contractor who is awarded the Task Order shall develop and submit for formal review up to four (4) site-adapt submittals and the final design. The COR shall determine the number and requirements of the submittals necessary to design the work. The contractor is encouraged to develop and submit multiple cost saving proposals for innovative design alternatives.

## **10% SITE-ADAPT PRELIMINARY DESIGN REVIEW**

Shall be the basic services required to develop the first submittal which represents site layout and new work to be constructed and a project schedule with milestone dates relevant to meeting required end dates.

## **65% SITE-ADAPT GENERAL DESIGN REVIEW**

- a. Shall include the basic services required to develop the submittal which represents: 100% complete drawings and specifications for site preparation work, utility construction, paving, foundation, and structural diaphragm of all work and approximately 35% complete drawings and specifications of all other required construction documents. Part I also includes incorporating the revisions identified in the First submittal review.
- b. After approval of the 10% drawings and specification submittal, the Government may issue a Clearance for Construction letter to commence with the Build Phase for all site and off-site utilities, clearing, grubbing, rough grading the site, demolition work, parking lot base course, foundation, and structural framing.
- c. A Pre-design meeting will be conducted to distribute drawings to the contractor, finalize and clarify technical information, and clarify other necessary information.

## **FINAL SITE-ADAPT DESIGN REVIEW (90%):**

Shall include all design services required to complete the design submittal: 100% complete drawings and specifications for site preparation work, utility construction, paving, foundation, and structural diaphragm of all work and approximately 65% complete drawings and specifications of all other required construction documents. 90% design shall not begin until an approval of the 65% submittal is issued.

## **CLEARED FOR CONSTRUCTION” SUBMITTAL (100%):**

Shall include all design services required to complete the design submittal (100%). 100% design shall not begin until an approval of the 90% submittal is issued.

## **BUILD PHASE**

- d. The Build Phase will be initiated by an authorization letter.
- e. The authorization letter will be provided separately by the Contracting Officer for each phase of the work. The Government may give the Contractor authorization for the Build Phase for portions of the work following review and approval of the First Design Submittal.
- f. Weekly coordination meetings will be held at which, as a minimum, the Contractor’s Project Manager, a representative of the Designer, the site Superintendent, and the Contractor’s Quality Control Manager shall be present.

## **PROJECT SCHEDULE**

The following is an internal design schedule and is subject to modification by the Offeror to suit their particular method of operation. Overall time constraints are required and cannot be changed except by contract modification. Prospective offerors shall be required to submit a complete schedule for design and construction that meets or exceeds the overall time goals of the Government for this project.

Notice to Proceed	following Award of Contract (upon written notification)
Design Phase - Basic Services Pre-design Meeting	within 7 days from Award of Contract
Design Submittal Due	within 30 days following Award of Contract
Submittal Review Conference	within 7 days following submittal review

*(location TBD)*

Incorporate Changes to Submittal  
(Re-Submit for Review and Approval)

within 7 days following review conference

Build Phase Authorization for Remainder  
of Work

Upon approval of design submittal

Total Design and Construction Period  
(performance)

number of days varies depending on task order

period includes design and construction phases)

### **LIQUIDATED DAMAGES:**

Liquidated damages in the amount of \$ (varies by task order) every calendar day of delay shall be assessed and charged to the Contractor.

*All days are in calendar days.*

### **PART 2 - PRODUCTS (NOT APPLICABLE)**

### **PART 3 - EXECUTION (NOT APPLICABLE)**

--END OF SECTION 00150 -

### SECTION 00555

### **SECTION 00555**

### **SITE-ADAPT DESIGN CONCEPT DOCUMENTS**

#### **GENERAL**

The Contractor shall complete all work as shown in the furnished drawings and specifications without deviation, unless site conditions or Task Order requirements mandate deviations. Where deviations from, or additions to, the furnished drawings and specifications, are required, the Contractor shall design and prepare drawings, sketches and specifications necessary to "site-adapt" the contracted work. Site-adapt work shall achieve the initial intent of the task order, drawings and specifications provided. Unless specifically noted in the task order, site-adapt design efforts shall be limited to work which must deviate from or supplement the drawings and specifications initially provided. Site-adapt work is to be considered incidental and necessary and shall be considered to be part of the overall scope of contracted services to be performed by the Contractor in order to deliver a complete product. All references to design in this and other sections of this contract refer to site-adapt efforts.



## **RFP**

This section identifies documents issued with this RFP which establish the concept or basis for the project design. These requirements are minimum standards and may be exceeded by the Offeror. Deviations from these concepts and standards may be approved if considered by the Government to be in its best interests.

The extent of development of these requirements in no way relieves the successful Offeror from the responsibility of completing the design, construction documentation, and construction of the facility in conformance with applicable criteria and codes.

## **AED DESIGN REQUIREMENTS AND RFP DESIGN CRITERIA**

General design requirements are set forth in this RFP herein. The Afghanistan Engineer District (AED) Design Requirements documents and the Specifications Divisions 02 thru 16 are the primary criteria for the design and construction of the project. The AED Design Requirements documents are available from the COR. These documents shall be used as the basis for design and construction, and for selecting options within the United Facilities Guide Specifications (UFGS). It is the contractor's option to use specifications contained in the AED Design Requirements Documents, when provided, or to adapt the UFGS specifications to match the requirements provided in the AED Design Documents and specifications. Site or project specific data and requirements in the AED Design Requirements documents shall supersede UFGS language where there are differing criteria which must be evaluated and selected.

General design criteria are also available from commercial sources or from the Construction Criteria Base (CCB) or 'Techinfo' website located at <http://www.wbdg.org/ccb/>. The references within CCB must be obtained by the A/E if the criteria are required or desired. All design, unless otherwise specified, shall be based on AED Design Requirements documents and nationally recognized industry standard, criteria, and practice.

## **APPENDIX DOCUMENTS**

See Appendices for further technical requirements, criteria, and parameters that are a part of this contract.

## **SPECIFICATIONS**

Specifications as included herein shall be utilized as design criteria and minimum standards for the corresponding construction work. The successful Offeror shall develop complete construction specifications for Site-Adapt work using the criteria included in these specifications.

The Government will provide Division 1 specifications sections as required, to the successful Offeror; and these sections shall be included in the final construction specifications without change. The Contractor shall furnish these specifications on electronic media for the production of construction specifications when requested. These specifications shall be submitted together with other required contractor prepared project specific site-adapt construction documents during the General Design Review (65%) of the Design Phase and other submittals, in accordance with Section 01335 SUBMITTAL REQUIREMENTS.

## **ORDER OF PRECEDENCE**

In case of conflict, duplication, or overlap of design criteria specified in the documents referenced in this section, the following order of precedence shall be followed:

- i. 1. Contract Award Document, AED Design Requirements and referenced publications therein.
- ii. 2. Written requirements supersede drawings.

## **MANDATORY CRITERIA**

**The Contractor shall complete all work as shown in the furnished drawings and specifications without deviation, unless site-adapt work is necessary.**

Portions of the RFP criteria documents provide mandatory criteria. Mandatory criteria consists of drawings, schematics, specifications, and other requirements which shall not be altered or modified for proposal submittal or subsequent final design except for site-adapt adjustments. Adjustment for coordination or for cost reduction proposals is allowed per Section 00150. Non-mandatory criteria shall be considered minimum requirements and may be enhanced, improved, or substituted to better suit design requirements or to improve evaluation consideration. Mandatory requirements are as listed below. All other design criteria shall be considered non-mandatory.

- i. Work Plan
- ii. Boundary survey plan
- iii. Topographic survey plan
- iv. Any mandatory criteria referenced within Project Program.
- v. Any other criteria listed herein which is listed, shown or implied as mandatory.

## **ADDITIONAL DOCUMENTS/CRITERIA FURNISHED BY THE GOVERNMENT**

The following documents will be furnished to the Contractor when requested by the Offeror or Contractor:

- vi. Design Criteria published by the Government such as Technical Manuals (TM), Engineer Manuals (EM), Engineer Technical Letters (ETL), AED Design Requirements, and other documents related to the design referenced herein which are not available on the Internet, including the CCB website.
- vii. Commercial design criteria and specifications will not be furnished by the Government.
- viii. Conversion of electronic media to other formats shall be the responsibility of the Contractor.

-- End of Section 00555 --

Section 00600 - Representations & Certifications

CLAUSES INCORPORATED BY REFERENCE

252.209-7001	Disclosure of Ownership or Control by the Government of a Terrorist Country	JAN 2009
252.209-7002	Disclosure Of Ownership Or Control By A Foreign Government	JUN 2005
252.225-7031	Secondary Arab Boycott Of Israel	JUN 2005

CLAUSES INCORPORATED BY FULL TEXT

52.204-8 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (FEB 2009)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 236220.

(2) The small business size standard is \$33.5M.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b)(1) If the clause at 52.204-7, Central Contractor Registration, is included in this solicitation, paragraph (d) of this provision applies.

(2) If the clause at 52.204-7 is not included in this solicitation, and the offeror is currently registered in CCR, and has completed the ORCA electronically, the offeror may choose to use paragraph (d) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:

☐ Paragraph (d) applies.

☐ Paragraph (d) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

(c)(1) The following representations or certifications in ORCA are applicable to this solicitation as indicated:

(i) 52.203-2, Certificate of Independent Price Determination. This provision applies to solicitations when a firm-fixed-price contract or fixed-price contract with economic price adjustment is contemplated, unless--

(A) The acquisition is to be made under the simplified acquisition procedures in Part 13;

(B) The solicitation is a request for technical proposals under two-step sealed bidding procedures; or

(C) The solicitation is for utility services for which rates are set by law or regulation.

(ii) 52.203-11, Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions. This provision applies to solicitations expected to exceed \$100,000.

(iii) 52.204-3, Taxpayer Identification. This provision applies to solicitations that do not include the clause at 52.204-7, Central Contractor Registration.

(iv) 52.204-5, Women-Owned Business (Other Than Small Business). This provision applies to solicitations that--

(A) Are not set aside for small business concerns;

(B) Exceed the simplified acquisition threshold; and

(C) Are for contracts that will be performed in the United States or its outlying areas.

(v) 52.209-5, Certification Regarding Responsibility Matters. This provision applies to solicitations where the contract value is expected to exceed the simplified acquisition threshold.

(vi) 52.214-14, Place of Performance--Sealed Bidding. This provision applies to invitations for bids except those in which the place of performance is specified by the Government.

(vii) 52.215-6, Place of Performance. This provision applies to solicitations unless the place of performance is specified by the Government.

(viii) 52.219-1, Small Business Program Representations (Basic & Alternate I). This provision applies to solicitations when the contract will be performed in the United States or its outlying areas.

(A) The basic provision applies when the solicitations are issued by other than DoD, NASA, and the Coast Guard.

(B) The provision with its Alternate I applies to solicitations issued by DoD, NASA, or the Coast Guard.

(ix) 52.219-2, Equal Low Bids. This provision applies to solicitations when contracting by sealed bidding and the contract will be performed in the United States or its outlying areas.

(x) 52.222-22, Previous Contracts and Compliance Reports. This provision applies to solicitations that include the clause at 52.222-26, Equal Opportunity.

(xi) 52.222-25, Affirmative Action Compliance. This provision applies to solicitations, other than those for construction, when the solicitation includes the clause at 52.222-26, Equal Opportunity.

(xii) 52.222-38, Compliance with Veterans' Employment Reporting Requirements. This provision applies to solicitations when it is anticipated the contract award will exceed the simplified acquisition threshold and the contract is not for acquisition of commercial items.

(xiii) 52.223-1, Biobased Product Certification. This provision applies to solicitations that require the delivery or specify the use of USDA-designated items; or include the clause at 52.223-2, Affirmative Procurement of Biobased Products Under Service and Construction Contracts.

(xiv) 52.223-4, Recovered Material Certification. This provision applies to solicitations that are for, or specify the use of, EPA-designated items.

(xv) 52.225-2, Buy American Act Certificate. This provision applies to solicitations containing the clause at 52.225-1.

(xvi) 52.225-4, Buy American Act--Free Trade Agreements--Israeli Trade Act Certificate. (Basic, Alternate I, and Alternate II) This provision applies to solicitations containing the clause at 52.225-3.

(A) If the acquisition value is less than \$25,000, the basic provision applies.

(B) If the acquisition value is \$25,000 or more but is less than \$50,000, the provision with its Alternate I applies.

(C) If the acquisition value is \$50,000 or more but is less than \$67,826, the provision with its Alternate II applies.

(xvii) 52.225-6, Trade Agreements Certificate. This provision applies to solicitations containing the clause at 52.225-5.

(xviii) 52.225-20, Prohibition on Conducting Restricted Business Operations in Sudan--Certification.

(xix) 52.226-2, Historically Black College or University and Minority Institution Representation. This provision applies to--

(A) Solicitations for research, studies, supplies, or services of the type normally acquired from higher educational institutions; and

(B) For DoD, NASA, and Coast Guard acquisitions, solicitations that contain the clause at 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns.

(2) The following certifications are applicable as indicated by the Contracting Officer:

(Contracting Officer check as appropriate.)

----(i) 52.219-19, Small Business Concern Representation for the Small Business Competitiveness Demonstration Program.

----- (ii) 52.219-21, Small Business Size Representation for Targeted Industry Categories Under the Small Business Competitiveness Demonstration Program.

----- (iii) 52.219-22, Small Disadvantaged Business Status.

----- (A) Basic.

----- (B) Alternate I.

XX ----- (iv) 52.222-18, Certification Regarding Knowledge of Child Labor for Listed End Products.

----- (v) 52.222-48, Exemption from Application of the Service Contract Act to Contracts for Maintenance, Calibration, or Repair of Certain Equipment Certification.

----- (vi) 52.222-52 Exemption from Application of the Service Contract Act to Contracts for Certain Services-- Certification.

----- (vii) 52.223-9, with its Alternate I, Estimate of Percentage of Recovered Material Content for EPA- Designated Products (Alternate I only).

XX ----- (viii) 52.223-13, Certification of Toxic Chemical Release Reporting.

----- (ix) 52.227-6, Royalty Information.

----- (A) Basic.

----- (B) Alternate I.

----- (x) 52.227-15, Representation of Limited Rights Data and Restricted Computer Software.

(d) The offeror has completed the annual representations and certifications electronically via the Online Representations and Certifications Application (ORCA) website at <http://orca.bpn.gov>. After reviewing the ORCA database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically that apply to this solicitation as indicated in paragraph (c) of this provision have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below (offeror to insert changes, identifying change by clause number, title, date). These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR Clause	Title	Date	Change
-----	-----	-----	-----
-----	-----	-----	-----

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on ORCA.

(End of Provision)

#### 252.204-7007 ANNUAL REPRESENTATIONS AND CERTIFICATIONS (52.204-8) ALTERNATE A

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 236220.

(2) The small business size standard is \$33.5M.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b)(1) If the clause at 52.204-7, Central Contractor Registration, is included in this solicitation, paragraph (c) of this provision applies.

(2) If the clause at 52.204-7 is not included in this solicitation, and the offeror is currently registered in CCR, and has completed the ORCA electronically, the offeror may choose to use paragraph (b) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:

☐ Paragraph (c) applies.

☐ Paragraph (c) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

(c) The offeror has completed the annual representations and certifications electronically via the Online Representations and Certifications Application (ORCA) Web site at <https://orca.bpn.gov/>.

After reviewing the ORCA database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer, and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below [offeror to insert changes,

identifying change by clause number, title, date]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR/DFARS clause No.	Title	Date	Change

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on ORCA.

(End of Provision)

### **DBA REPRESENTATION**

#### **DEFENSE BASE ACT INSURANCE RATES – LIMITATION – FIXED-PRICE (OCT 2009)**

(a) The U.S. Army Corps of Engineers (USACE) has entered into a contract with **CNA Insurance** to provide all Defense Base Act (DBA) insurance to USACE and JCC-I/A contractors and subcontractors at a contracted fixed rate. The fixed rates for this insurance are as follows:

Service	\$4.00	per \$100 of employee remuneration
Construction	\$6.00	per \$100 of employee remuneration
Security	\$10.00	per \$100 of employee remuneration
Aviation	\$17.00	per \$100 of employee remuneration

(b) Bidders/Offerors should **compute the total compensation or total payroll**, (salary, plus overseas recruitment incentive and post differential, but ***excludes*** per diem, housing allowance, travel expenses, temporary quarters allowance, education allowance and other miscellaneous post allowances to include fee or profit) to be paid to employees who will be covered by DBA insurance. Compute the cost of DBA Insurance by utilizing the spaces provided below for the base period and whatever extension there may be thereafter, if applicable.

(1) Compensation of Covered Employees: \_\_\_\_\_  
(Total Payroll Not Total Contract Value) Ex: If total Payroll is \$100,000.00

(2) Applicable DBA Rate: \_\_\_\_\_  
(Use appropriate Rate) Ex: If a Service, the rate is \$4.00/\$100 or 4%

(3) Total DBA Cost: \_\_\_\_\_  
(Amount of DBA Premium) Ex: \$100 K multiplied by 4% is \$4,000.00

(c) Bidders/Offerors shall include a statement as to whether or not local nationals or third country nationals will be employed on the resultant contract.

(d) CNA Insurance is utilizing Rutherford International as their managing Broker. The primary POC is the USACE DBA Program Administrator is Ramoan Jones, (703) 813-6571 [ramoan.jones@rutherford.com](mailto:ramoan.jones@rutherford.com). The alternate POC is Sara Payne, Senior Vice President, (703) 813-6503 [sara.payne@rutherford.com](mailto:sara.payne@rutherford.com).

(e) Labor Category/Job Classification Definitions:

SERVICE: \$4.00/\$100 “White collar” workers such as IT Consultants, Engineers, Administrative type Office workers and light housekeeping. Security Consultants could be included as long as they are just assessing risk and not providing armed protection.

CONSTRUCTION: \$6.00/\$100 “Blue collar” workers providing Construction services such as Carpentry, Electrical, Plumbing, Concrete, Asphalt, Day Laborers, Operation and Maintenance of Heavy Equipment

SECURITY: \$10.00/\$100 Personal Security Detail (PSD) and Static or Convoy Guarding property of Personnel

AVIATION: \$17.00/\$100 Pilot and Crew of any aircraft excluding ground personnel who provide maintenance or services but stay on the ground

(End of Provision)



## Section 00700 - Contract Clauses

### CLAUSES INCORPORATED BY REFERENCE

52.202-1	Definitions	JUL 2004
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	APR 1984
52.203-6	Restrictions On Subcontractor Sales To The Government	SEP 2006
52.203-7	Anti-Kickback Procedures	JUL 1995
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	JAN 1997
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	SEP 2007
52.203-13	Contractor Code of Business Ethics and Conduct	DEC 2008
52.204-4	Printed or Copied Double-Sided on Recycled Paper	AUG 2000
52.204-7	Central Contractor Registration	APR 2008
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	SEP 2006
52.211-13	Time Extensions	SEP 2000
52.215-2	Audit and Records--Negotiation	MAR 2009
52.215-8	Order of Precedence--Uniform Contract Format	OCT 1997
52.215-10	Price Reduction for Defective Cost or Pricing Data	OCT 1997
52.215-11	Price Reduction for Defective Cost or Pricing Data--Modifications	OCT 1997
52.215-12	Subcontractor Cost or Pricing Data	OCT 1997
52.215-13	Subcontractor Cost or Pricing Data--Modifications	OCT 1997
52.215-17	Waiver of Facilities Capital Cost of Money	OCT 1997
52.215-20	Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data	OCT 1997
52.222-21	Prohibition Of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	MAR 2007
52.222-27	Affirmative Action Compliance Requirements for Construction	FEB 1999
52.222-29	Notification Of Visa Denial	JUN 2003
52.222-35	Equal Opportunity For Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	SEP 2006
52.222-36	Affirmative Action For Workers With Disabilities	JUN 1998
52.222-36	Affirmative Action For Workers With Disabilities	JUN 1998
52.222-37	Employment Reports On Special Disabled Veterans, Veterans Of The Vietnam Era, and Other Eligible Veterans	SEP 2006
52.222-39	Notification of Employee Rights Concerning Payment of Union Dues or Fees	DEC 2004
52.222-50	Combating Trafficking in Persons	FEB 2009
52.224-1	Privacy Act Notification	APR 1984
52.225-13	Restrictions on Certain Foreign Purchases	JUN 2008
52.225-14	Inconsistency Between English Version And Translation Of Contract	FEB 2000
52.227-3	Patent Indemnity	APR 1984
52.227-14	Rights in Data--General	DEC 2007
52.228-3	Worker's Compensation Insurance (Defense Base Act)	APR 1984
52.228-5	Insurance - Work On A Government Installation	JAN 1997
52.229-6	Taxes--Foreign Fixed-Price Contracts	JUN 2003

52.230-2	Cost Accounting Standards	OCT 2008
52.232-5	Payments under Fixed-Price Construction Contracts	SEP 2002
52.232-17	Interest	OCT 2008
52.232-18	Availability Of Funds	APR 1984
52.232-27	Prompt Payment for Construction Contracts	OCT 2008
52.233-1	Disputes	JUL 2002
52.233-3	Protest After Award	AUG 1996
52.233-4	Applicable Law for Breach of Contract Claim	OCT 2004
52.236-2	Differing Site Conditions	APR 1984
52.236-3	Site Investigation and Conditions Affecting the Work	APR 1984
52.236-4	Physical Data	APR 1984
52.236-5	Material and Workmanship	APR 1984
52.236-6	Superintendence by the Contractor	APR 1984
52.236-7	Permits and Responsibilities	NOV 1991
52.236-8	Other Contracts	APR 1984
52.236-9	Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements	APR 1984
52.236-10	Operations and Storage Areas	APR 1984
52.236-11	Use and Possession Prior to Completion	APR 1984
52.236-12	Cleaning Up	APR 1984
52.236-13	Accident Prevention	NOV 1991
52.236-15	Schedules for Construction Contracts	APR 1984
52.236-17	Layout of Work	APR 1984
52.236-21	Specifications and Drawings for Construction	FEB 1997
52.236-23	Responsibility of the Architect-Engineer Contractor	APR 1984
52.242-13	Bankruptcy	JUL 1995
52.242-14	Suspension of Work	APR 1984
52.243-4	Changes	JUN 2007
52.243-6	Change Order Accounting	APR 1984
52.244-6	Subcontracts for Commercial Items	AUG 2009
52.246-12	Inspection of Construction	AUG 1996
52.246-21	Warranty of Construction	MAR 1994
52.248-3	Value Engineering-Construction	SEP 2006
52.249-2 Alt I	Termination for Convenience of the Government (Fixed- Price) (May 2004) - Alternate I	SEP 1996
52.249-3	Termination for Convenience of the Government (Dismantling, Demolition, or Removal of Improvements)	MAY 2004
52.249-10 Alt I	Default (Fixed-Price Construction) (Apr 1984) Alternate I	APR 1984
52.253-1	Computer Generated Forms	JAN 1991
252.201-7000	Contracting Officer's Representative	DEC 1991
252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense- Contract-Related Felonies	DEC 2008
252.204-7000	Disclosure Of Information	DEC 1991
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.204-7004 Alt A	Central Contractor Registration (52.204-7) Alternate A	SEP 2007
252.205-7000	Provision Of Information To Cooperative Agreement Holders	DEC 1991
252.209-7004	Subcontracting With Firms That Are Owned or Controlled By The Government of a Terrorist Country	DEC 2006
252.215-7000	Pricing Adjustments	DEC 1991
252.222-7002	Compliance With Local Labor Laws (Overseas)	JUN 1997
252.223-7003	Changes In Place Of Performance--Ammunition And Explosives	DEC 1991
252.223-7004	Drug Free Work Force	SEP 1988
252.225-7021	Trade Agreements	NOV 2009
252.225-7041	Correspondence in English	JUN 1997

252.227-7013	Rights in Technical Data--Noncommercial Items	NOV 1995
252.227-7022	Government Rights (Unlimited)	MAR 1979
252.227-7023	Drawings and Other Data to become Property of Government	MAR 1979
252.227-7033	Rights in Shop Drawings	APR 1966
252.229-7000	Invoices Exclusive of Taxes or Duties	JUN 1997
252.231-7000	Supplemental Cost Principles	DEC 1991
252.232-7003	Electronic Submission of Payment Requests and Receiving Reports	MAR 2008
252.232-7008	Assignment of Claims (Overseas)	JUN 1997
252.232-7010	Levies on Contract Payments	DEC 2006
252.233-7001	Choice of Law (Overseas)	JUN 1997
252.236-7000	Modification Proposals-Price Breakdown	DEC 1991
252.236-7005	Airfield Safety Precautions	DEC 1991
252.236-7008	Contract Prices-Bidding Schedules	DEC 1991
252.243-7001	Pricing Of Contract Modifications	DEC 1991
252.243-7002	Requests for Equitable Adjustment	MAR 1998
252.247-7007	Liability and Insurance	DEC 1991
252.247-7023	Transportation of Supplies by Sea	MAY 2002
252.247-7024	Notification Of Transportation Of Supplies By Sea	MAR 2000

#### CLAUSES INCORPORATED BY FULL TEXT

##### 52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within TBD at Task Order Level Calendar days after the date the contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than TBD at Task Order Level\*. The time stated for completion shall include final cleanup of the premises.

\*The Contracting Officer shall specify either a number of days after the date the contractor receives the notice to proceed, or a calendar date.

(End of clause)

#### CLAUSES INCORPORATED BY FULL TEXT

##### 52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of TBD at Task Order Level for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

## CLAUSES INCORPORATED BY FULL TEXT

### 52.215-19 NOTIFICATION OF OWNERSHIP CHANGES (OCT 1997)

(a) The Contractor shall make the following notifications in writing:

(1) When the Contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the Contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.

(2) The Contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.

(b) The Contractor shall--

(1) Maintain current, accurate, and complete inventory records of assets and their costs;

(2) Provide the ACO or designated representative ready access to the records upon request;

(3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Contractor's ownership changes; and

(4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Contractor ownership change.

The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(k).

(End of clause)

## CLAUSES INCORPORATED BY FULL TEXT

### 52.216-18 ORDERING. (OCT 1995)

(a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from date of award, and through the end of the option periods if exercised.

(b) All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of conflict between a delivery order or task order and this contract, the contract shall control.

(c) If mailed, a delivery order or task order is considered "issued" when the Government deposits the order in the mail. Orders may be issued orally, by facsimile, or by electronic commerce methods only if authorized in the Schedule.

(End of clause)

## CLAUSES INCORPORATED BY FULL TEXT

### 52.216-19 ORDER LIMITATIONS. (OCT 1995)

(a) Minimum order. When the Government requires supplies or services covered by this contract in an amount of less than \$25,000.00, the Government is not obligated to purchase, nor is the Contractor obligated to furnish, those supplies or services under the contract.

(b) Maximum order. The Contractor is not obligated to honor:

(1) Any order for a single item in excess of \$5,000,000.00

(2) Any order for a combination of items in excess of \$5,000,000.00

(3) A series of orders from the same ordering office within 10 days that together call for quantities exceeding the limitation in subparagraph (1) or (2) above.

(c) If this is a requirements contract (i.e., includes the Requirements clause at subsection 52.216-21 of the Federal Acquisition Regulation (FAR)), the Government is not required to order a part of any one requirement from the Contractor if that requirement exceeds the maximum-order limitations in paragraph (b) above.

(d) Notwithstanding paragraphs (b) and (c) above, the Contractor shall honor any order exceeding the maximum order limitations in paragraph (b), unless that order (or orders) is returned to the ordering office within 10 days after issuance, with written notice stating the Contractor's intent not to ship the item (or items) called for and the reasons. Upon receiving this notice, the Government may acquire the supplies or services from another source.

(End of clause)

## CLAUSES INCORPORATED BY FULL TEXT

### 52.233-2 SERVICE OF PROTEST (SEP 2006)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from Afghanistan District North, US Army Corps of Engineers, Kabul, Afghanistan APO AE 09356, ATTN: Contracting Office

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

## CLAUSES INCORPORATED BY FULL TEXT

### 52.236-1 PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least 25% percent of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

(End of clause)

#### CLAUSES INCORPORATED BY FULL TEXT

##### 52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) Site visits may be arranged during normal duty hours by contacting:

Name: N/A

Address:

Telephone:

(End of provision)

#### CLAUSES INCORPORATED BY FULL TEXT

##### 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

FAR: <http://acquisition.gov/far/index.html>

DFARS: <http://farsite.hill.af.mil/VFDFAR1.HTM>

AFARS: <http://farsite.hill.af.mil/VFAFAR1.HTM>

EFARS: <http://www.usace.army.mil/CECT/Pages/EFARS.aspx>

(End of clause)

##### 252.225-7040 CONTRACTOR PERSONNEL AUTHORIZED TO ACCOMPANY U.S. ARMED FORCES DEPLOYED OUTSIDE THE UNITED STATES (JUL 2009)

(a) Definitions. As used in this clause--Combatant Commander means the commander of a unified or specified combatant command established in accordance with 10 U.S.C. 161.

Designated operational area means a geographic area designated by the combatant commander or subordinate joint force commander for the conduct or support of specified military operations.

Law of war means that part of international law that regulates the conduct of armed hostilities. The law of war encompasses all international law for the conduct of hostilities binding on the United States or its individual citizens, including treaties and international agreements to which the United States is a party, and applicable customary international law.

Subordinate joint force commander means a sub-unified commander or joint task force commander.

(b) General.

(1) This clause applies when Contractor personnel are authorized to accompany U.S. Armed Forces deployed outside the United States in--

(i) Contingency operations;

(ii) Humanitarian or peacekeeping operations; or

(iii) Other military operations or military exercises, when designated by the Combatant Commander.

(2) Contract performance in support of U.S. Armed Forces deployed outside the United States may require work in dangerous or austere conditions. Except as otherwise provided in the contract, the Contractor accepts the risks associated with required contract performance in such operations.

(3) Contractor personnel are civilians accompanying the U.S. Armed Forces.

(i) Except as provided in paragraph (b)(3)(ii) of this clause, Contractor personnel are only authorized to use deadly force in self-defense.

(ii) Contractor personnel performing security functions are also authorized to use deadly force when such force reasonably appears necessary to execute their security mission to protect assets/persons, consistent with the terms and conditions contained in their contract or with their job description and terms of employment.

(iii) Unless immune from host nation jurisdiction by virtue of an international agreement or international law, inappropriate use of force by contractor personnel authorized to accompany the U.S. Armed Forces can subject such personnel to United States or host nation prosecution and civil liability (see paragraphs (d) and (j)(3) of this clause).

(4) Service performed by Contractor personnel subject to this clause is not active duty or service under 38 U.S.C. 106 note.

(c) Support. (1)(i) The Combatant Commander will develop a security plan for protection of Contractor personnel in locations where there is not sufficient or legitimate civil authority, when the Combatant Commander decides it is in the interests of the Government to provide security because--

(A) The Contractor cannot obtain effective security services;

(B) Effective security services are unavailable at a reasonable cost; or

(C) Threat conditions necessitate security through military means.

(ii) The Contracting Officer shall include in the contract the level of protection to be provided to Contractor personnel.

(iii) In appropriate cases, the Combatant Commander may provide security through military means, commensurate with the level of security provided DoD civilians.

(2)(i) Generally, all Contractor personnel authorized to accompany the U.S. Armed Forces in the designated operational area are authorized to receive resuscitative care, stabilization, hospitalization at level III military treatment facilities, and assistance with patient movement in emergencies where loss of life, limb, or eyesight could occur. Hospitalization will be limited to stabilization and short-term medical treatment with an emphasis on return to duty or placement in the patient movement system.

(ii) When the Government provides medical treatment or transportation of Contractor personnel to a selected civilian facility, the Contractor shall ensure that the Government is reimbursed for any costs associated with such treatment or transportation.

(iii) Medical or dental care beyond this standard is not authorized unless specified elsewhere in this contract.

(3) Unless specified elsewhere in this contract, the Contractor is responsible for all other support required for its personnel engaged in the designated operational area under this contract.

(4) Contractor personnel must have a letter of authorization issued by the Contracting Officer in order to process through a deployment center or to travel to, from, or within the designated operational area. The letter of authorization also will identify any additional authorizations, privileges, or Government support that Contractor personnel are entitled to under this contract.

(d) Compliance with laws and regulations. (1) The Contractor shall comply with, and shall ensure that its personnel authorized to accompany U.S. Armed Forces deployed outside the United States as specified in paragraph (b)(1) of this clause are familiar with and comply with, all applicable--

(i) United States, host country, and third country national laws;

(ii) Provisions of the law of war, as well as any other applicable treaties and international agreements;

(iii) United States regulations, directives, instructions, policies, and procedures; and

(iv) Orders, directives, and instructions issued by the Combatant Commander, including those relating to force protection, security, health, safety, or relations and interaction with local nationals.

(2) The Contractor shall institute and implement an effective program to prevent violations of the law of war by its employees and subcontractors, including law of war training in accordance with paragraph (e)(1)(vii) of this clause.

(e) Pre-deployment requirements.

(1) The Contractor shall ensure that the following requirements are met prior to deploying personnel authorized to accompany U.S. Armed Forces. Specific requirements for each category may be specified in the statement of work or elsewhere in the contract.

(i) All required security and background checks are complete and acceptable.

(ii) All deploying personnel meet the minimum medical screening requirements and have received all required immunizations as specified in the contract. The Government will provide, at no cost to the Contractor, any theater-specific immunizations and/or medications not available to the general public.

(iii) Deploying personnel have all necessary passports, visas, and other documents required to enter and exit a designated operational area and have a Geneva Conventions identification card, or other appropriate DoD identity credential, from the deployment center. Any Common Access Card issued to deploying personnel shall contain the access permissions allowed by the letter of authorization issued in accordance with paragraph (c)(4) of this clause.



(iv) Special area, country, and theater clearance is obtained for personnel. Clearance requirements are in DoD Directive 4500.54, Official Temporary Duty Abroad, and DoD 4500.54-G, DoD Foreign Clearance Guide. Contractor personnel are considered non-DoD personnel traveling under DoD sponsorship.

(v) All personnel have received personal security training. At a minimum, the training shall--

(A) Cover safety and security issues facing employees overseas;

(B) Identify safety and security contingency planning activities; and

(C) Identify ways to utilize safety and security personnel and other resources appropriately.

(vi) All personnel have received isolated personnel training, if specified in the contract, in accordance with DoD Instruction 1300.23, Isolated Personnel Training for DoD Civilian and Contractors.

(vii) Personnel have received law of war training as follows:

(A) Basic training is required for all Contractor personnel authorized to accompany U.S. Armed Forces deployed outside the United States. The basic training will be provided through--

(1) A military-run training center; or

(2) A Web-based source, if specified in the contract or approved by the Contracting Officer.

(B) Advanced training, commensurate with their duties and responsibilities, may be required for some Contractor personnel as specified in the contract.

(2) The Contractor shall notify all personnel who are not a host country national, or who are not ordinarily resident in the host country, that--

(i) Such employees, and dependents residing with such employees, who engage in conduct outside the United States that would constitute an offense punishable by imprisonment for more than one year if the conduct had been engaged in within the special maritime and territorial jurisdiction of the United States, may potentially be subject to the criminal jurisdiction of the United States in accordance with the Military Extraterritorial Jurisdiction Act of 2000 (18 U.S.C. 3621, et seq.);

(ii) Pursuant to the War Crimes Act (18 U.S.C. 2441), Federal criminal jurisdiction also extends to conduct that is determined to constitute a war crime when committed by a civilian national of the United States;

(iii) Other laws may provide for prosecution of U.S. nationals who commit offenses on the premises of U.S. diplomatic, consular, military or other U.S. Government missions outside the United States (18 U.S.C. 7(9)); and

(iv) In time of declared war or a contingency operation, Contractor personnel authorized to accompany U.S. Armed Forces in the field are subject to the jurisdiction of the Uniform Code of Military Justice under 10 U.S.C. 802(a)(10).

(f) Processing and departure points. Deployed Contractor personnel shall--

(1) Process through the deployment center designated in the contract, or as otherwise directed by the Contracting Officer, prior to deploying. The deployment center will conduct deployment processing to ensure visibility and accountability of Contractor personnel and to ensure that all deployment requirements are met, including the requirements specified in paragraph (e)(1) of this clause;

(2) Use the point of departure and transportation mode directed by the Contracting Officer; and

(3) Process through a Joint Reception Center (JRC) upon arrival at the deployed location. The JRC will validate personnel accountability, ensure that specific designated operational area entrance requirements are met, and brief Contractor personnel on theater-specific policies and procedures.

(g) Personnel data.

(1) The Contractor shall enter before deployment and maintain data for all Contractor personnel that are authorized to accompany U.S. Armed Forces deployed outside the United States as specified in paragraph (b)(1) of this clause. The Contractor shall use the Synchronized Predeployment and Operational Tracker (SPOT) web-based system, at <http://www.dod.mil/bta/products/spot.html>, to enter and maintain the data.

(2) The Contractor shall ensure that all employees in the database have a current DD Form 93, Record of Emergency Data Card, on file with both the Contractor and the designated Government official. The Contracting Officer will inform the Contractor of the Government official designated to receive this data card.

(h) Contractor personnel.

(1) The Contracting Officer may direct the Contractor, at its own expense, to remove and replace any Contractor personnel who jeopardize or interfere with mission accomplishment or who fail to comply with or violate applicable requirements of this contract. Such action may be taken at the Government's discretion without prejudice to its rights under any other provision of this contract, including the Termination for Default clause.

(2) The Contractor shall have a plan on file showing how the Contractor would replace employees who are unavailable for deployment or who need to be replaced during deployment. The Contractor shall keep this plan current and shall provide a copy to the Contracting Officer upon request. The plan shall--

(i) Identify all personnel who are subject to military mobilization;

(ii) Detail how the position would be filled if the individual were mobilized; and

(iii) Identify all personnel who occupy a position that the Contracting Officer has designated as mission essential.

(3) Contractor personnel shall report to the Combatant Commander or a designee, or through other channels such as the military police, a judge advocate, or an inspector general, any suspected or alleged conduct for which there is credible information that such conduct--

(i) Constitutes violation of the law of war; or

(ii) Occurred during any other military operations and would constitute a violation of the law of war if it occurred during an armed conflict.

(i) Military clothing and protective equipment.

(1) Contractor personnel are prohibited from wearing military clothing unless specifically authorized in writing by the Combatant Commander. If authorized to wear military clothing, Contractor personnel must--

(i) Wear distinctive patches, arm bands, nametags, or headgear, in order to be distinguishable from military personnel, consistent with force protection measures; and

(ii) Carry the written authorization with them at all times.

(2) Contractor personnel may wear military-unique organizational clothing and individual equipment (OCIE) required for safety and security, such as ballistic, nuclear, biological, or chemical protective equipment.

(3) The deployment center, or the Combatant Commander, shall issue OCIE and shall provide training, if necessary, to ensure the safety and security of Contractor personnel.

(4) The Contractor shall ensure that all issued OCIE is returned to the point of issue, unless otherwise directed by the Contracting Officer.

(j) Weapons.

(1) If the Contractor requests that its personnel performing in the designated operational area be authorized to carry weapons, the request shall be made through the Contracting Officer to the Combatant Commander, in accordance with DoD Instruction 3020.41, paragraph 6.3.4.1 or, if the contract is for security services, paragraph 6.3.5.3. The Combatant Commander will determine whether to authorize in-theater Contractor personnel to carry weapons and what weapons and ammunition will be allowed.

(2) If the Contracting Officer, subject to the approval of the Combatant Commander, authorizes the carrying of weapons--

(i) The Contracting Officer may authorize the Contractor to issue Contractor-owned weapons and ammunition to specified employees; or

(ii) The Contracting Officer's Representative may issue Government-furnished weapons and ammunition to the Contractor for issuance to specified Contractor employees.

(3) The Contractor shall ensure that its personnel who are authorized to carry weapons--

(i) Are adequately trained to carry and use them--

(A) Safely;

(B) With full understanding of, and adherence to, the rules of the use of force issued by the Combatant Commander; and

(C) In compliance with applicable agency policies, agreements, rules, regulations, and other applicable law;

(ii) Are not barred from possession of a firearm by 18 U.S.C. 922; and

(iii) Adhere to all guidance and orders issued by the Combatant Commander regarding possession, use, safety, and accountability of weapons and ammunition.

(4) Whether or not weapons are Government-furnished, all liability for the use of any weapon by Contractor personnel rests solely with the Contractor and the Contractor employee using such weapon.

(5) Upon redeployment or revocation by the Combatant Commander of the Contractor's authorization to issue firearms, the Contractor shall ensure that all Government-issued weapons and unexpended ammunition are returned as directed by the Contracting Officer.

(k) Vehicle or equipment licenses. Contractor personnel shall possess the required licenses to operate all vehicles or equipment necessary to perform the contract in the designated operational area.

(l) Purchase of scarce goods and services. If the Combatant Commander has established an organization for the designated operational area whose function is to determine that certain items are scarce goods or services, the Contractor shall coordinate with that organization local purchases of goods and services designated as scarce, in accordance with instructions provided by the Contracting Officer.

(m) Evacuation.

(1) If the Combatant Commander orders a mandatory evacuation of some or all personnel, the Government will provide assistance, to the extent available, to United States and third country national Contractor personnel.

(2) In the event of a non-mandatory evacuation order, unless authorized in writing by the Contracting Officer, the Contractor shall maintain personnel on location sufficient to meet obligations under this contract.

(n) Next of kin notification and personnel recovery.

(1) The Contractor shall be responsible for notification of the employee-designated next of kin in the event an employee dies, requires evacuation due to an injury, or is isolated, missing, detained, captured, or abducted.

(2) In the case of isolated, missing, detained, captured, or abducted Contractor personnel, the Government will assist in personnel recovery actions in accordance with DoD Directive 3002.01E, Personnel Recovery in the Department of Defense.

(o) Mortuary affairs. Mortuary affairs for Contractor personnel who die while accompanying the U.S. Armed Forces will be handled in accordance with DoD Directive 1300.22, Mortuary Affairs Policy.

(p) Changes. In addition to the changes otherwise authorized by the Changes clause of this contract, the Contracting Officer may, at any time, by written order identified as a change order, make changes in the place of performance or Government-furnished facilities, equipment, material, services, or site. Any change order issued in accordance with this paragraph (p) shall be subject to the provisions of the Changes clause of this contract.

(q) Subcontracts. The Contractor shall incorporate the substance of this clause, including this paragraph (q), in all subcontracts when subcontractor personnel are authorized to accompany U.S. Armed Forces deployed outside the United States in--

(1) Contingency operations;

(2) Humanitarian or peacekeeping operations; or

(3) Other military operations or military exercises, when designated by the Combatant Commander.

(End of clause)

#### 252.225-7043 ANTITERRORISM/FORCE PROTECTION POLICY FOR DEFENSE CONTRACTORS OUTSIDE THE UNITED STATES (MAR 2006)

(a) Definition. United States, as used in this clause, means, the 50 States, the District of Columbia, and outlying areas.

(b) Except as provided in paragraph (c) of this clause, the Contractor and its subcontractors, if performing or traveling outside the United States under this contract, shall--

(1) Affiliate with the Overseas Security Advisory Council, if the Contractor or subcontractor is a U.S. entity;

(2) Ensure that Contractor and subcontractor personnel who are U.S. nationals and are in-country on a non-transitory basis, register with the U.S. Embassy, and that Contractor and subcontractor personnel who are third country nationals comply with any security related requirements of the Embassy of their nationality;

(3) Provide, to Contractor and subcontractor personnel, antiterrorism/force protection awareness information commensurate with that which the Department of Defense (DoD) provides to its military and civilian personnel and their families, to the extent such information can be made available prior to travel outside the United States; and

(4) Obtain and comply with the most current antiterrorism/force protection guidance for Contractor and subcontractor personnel.

(c) The requirements of this clause do not apply to any subcontractor that is--

(1) A foreign government;

(2) A representative of a foreign government; or

(3) A foreign corporation wholly owned by a foreign government.

(d) Information and guidance pertaining to DoD antiterrorism/force protection can be obtained from HQDA-AT; telephone, DSN 222-9832 or commercial (703) 692-9832.

(End of clause)

#### 252.225-7044 BALANCE OF PAYMENTS PROGRAM--CONSTRUCTION MATERIAL (JAN 2009)

(a) Definitions. As used in this clause--

Commercially available off-the-shelf (COTS) item--

(1) Means any item of supply (including construction material) that is--

(i) A commercial item (as defined in paragraph (1) of the definition of "commercial item" in section 2.101 of the Federal Acquisition Regulation);

(ii) Sold in substantial quantities in the commercial marketplace; and

(iii) Offered to the Government, under a contract or subcontract at any tier, without modification, in the same form in which it is sold in the commercial marketplace; and

(2) Does not include bulk cargo, as defined in section 3 of the Shipping Act of 1984 (46 U.S.C. 40102), such as agricultural products and petroleum products.

"Component" means any article, material, or supply incorporated directly into construction material.

"Construction material" means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

"Cost of components" means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the end product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the construction material.

“Domestic construction material” means--

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if--

(i) The cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic; or

(ii) The construction material is a COTS item.

“United States” means the 50 States, the District of Columbia, and outlying areas.

(b) Domestic preference. This clause implements the Balance of Payments Program by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except for—

(1) Construction material valued at or below the simplified acquisition threshold in part 2 of the Federal Acquisition Regulation; or

(2) The construction material or components listed by the Government as follows:

Sand, cement asphalt, gravel and other soil materials, stone, concrete masonry units, fired brick, reinforcing steel, electrical materials, gypsum, wall board, roofing materials, paint, valves, floor tiles, acoustical ceiling, panels, other systems, steel joist, miscellaneous metal and building insulations.

(End of clause)

#### 252.229-7001 TAX RELIEF (JUN 1997)

(a) Prices set forth in this contract are exclusive of all taxes and duties from which the United States Government is exempt by virtue of tax agreements between the United States Government and the Contractor's government. The following taxes or duties have been excluded from the contract price:

NAME OF TAX: (Offeror Insert) RATE (PERCENTAGE): (Offeror Insert)

(b) The Contractor's invoice shall list separately the gross price, amount of tax deducted, and net price charged.

(c) When items manufactured to United States Government specifications are being acquired, the Contractor shall identify the materials or components intended to be imported in order to ensure that relief from import duties is obtained. If the Contractor intends to use imported products from inventories on hand, the price of which includes a factor for import duties, the Contractor shall ensure the United States Government's exemption from these taxes.

The Contractor may obtain a refund of the import duties from its government or request the duty-free import of an amount of supplies or components corresponding to that used from inventory for this contract.

(End of clause)

#### 252.236-7001 CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000)

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall--

- (1) Check all drawings furnished immediately upon receipt;
- (2) Compare all drawings and verify the figures before laying out the work;
- (3) Promptly notify the Contracting Officer of any discrepancies;
- (4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and
- (5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

- (1) Large-scale drawings shall govern small-scale drawings; and
- (2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified on the following index of drawings:

**As contained in this contract and any specifications and drawings contained in task orders.**

(End of clause)

SPECIAL CONTRACT REQUIREMENTS

**SECTION 00800**

**JCC-I/A 952.232-0002 PAYMENT IN LOCAL CURRENCY (AFGHANISTAN) (OCT 2009)**

This contract is awarded in U.S. Dollars. The contractor will receive payment in local currency. The currency exchange rate will be determined at the official exchange rate posted by the local DoD Finance office on the date of the payment in accordance with the Department of Defense Financial Management Regulation. Local currency payments are made via Electronic Funds Transfer. Local currency is defined as the currency of the receiving financial institution. Payments in cash are restricted to contracts where the vendor provides proof that an account at a bank accepting local EFT is unavailable.

**JCC-I/A CLAUSE 952.222-0001**

**PROHIBITION AGAINST HUMAN TRAFFICKING, INHUMANE LIVING CONDITIONS, AND WITHHOLDING OF EMPLOYEE PASSPORTS (MAR 2009)**

(a) All contractors ("contractors" refers to both prime contractors and all subcontractors at all tiers) are reminded of the prohibition contained in Title 18, United States Code, Section 1592, against knowingly destroying, concealing, removing, confiscating, or possessing any actual or purported passport or other immigration document, or any other actual or purported government identification document, of another person, to prevent or restrict or to attempt to prevent or restrict, without lawful authority, the person's liberty to move or travel, in order to maintain the labor or services of that person, when the person is or has been a victim of a severe form of trafficking in persons.

(b) Contractors are also required to comply with the following provisions:

(1) Contractors shall only hold employee passports and other identification documents discussed above for the shortest period of time reasonable for administrative processing purposes.

(2) Contractors shall provide all employees with a signed copy of their employment contract, in English as well as the employee's native language that defines the terms of their employment/compensation.

(3) Contractors shall not utilize unlicensed recruiting firms, or firms that charge illegal recruiting fees.

(4) Contractors shall be required to provide adequate living conditions (sanitation, health, safety, living space) for their employees. Fifty square feet is the minimum acceptable square footage of personal living space per employee. Upon contractor's written request, contracting officers may grant a waiver in writing in cases where the existing square footage is within 20% of the minimum, and the overall conditions are determined by the contracting officer to be acceptable. A copy of the waiver approval shall be maintained at the respective life support area.

(5) Contractors shall incorporate checks of life support areas to ensure compliance with the requirements of this Trafficking in Persons Prohibition into their Quality Control program, which will be reviewed within the Government's Quality Assurance process.



(6) Contractors shall comply with international laws regarding transit/exit/entry procedures, and the requirements for work visas. Contractors shall follow all Host Country entry and exit requirements.

(c) Contractors have an affirmative duty to advise the Contracting Officer if they learn of their employees violating the human trafficking and inhumane living conditions provisions contained herein. Contractors are advised that contracting officers and/or their representatives will conduct random checks to ensure contractors and subcontractors at all tiers are adhering to the law on human trafficking, humane living conditions and withholding of passports.

(d) The contractor agrees to incorporate the substance of this clause, including this paragraph, in all subcontracts under his contract.

(End)

**JCC-I/A CLAUSE 952.223-0001**

**REPORTING KIDNAPPINGS, SERIOUS INJURIES AND DEATHS  
(MAR 2009)**

Contractors shall notify the Contracting Officer, as soon as practicable, whenever employee kidnappings, serious injuries or deaths occur.

Report the following information:

Contract Number

Contract Description & Location

Company Name

Reporting party:

Name

Phone number

e-mail address

Victim:

Name

Gender (Male/Female)

Age

Nationality

Country of permanent residence

Incident:

Description

Location

Date and time

Other Pertinent Information

(End)

**JCC-I/A CLAUSE 952.225-0002**

**ARMED PERSONNEL INCIDENT REPORTS  
(MAR 2009)**

(a) All contractors and subcontractors in the Multi-National Forces-Iraq (MNF-I) or Combined Joint Task Force (Afghanistan) theater of operations shall comply with and shall ensure that their personnel supporting MNF-I or CJTF forces are familiar with and comply with all applicable orders, directives, and instructions issued by the respective MNF-I or CJTF Commanders relating to force protection and safety.

(b) **IRAQ:** Contractors shall provide all incidents and use of weapons firing incidents to the MNC-I Contractor Operations Cell (CONOC) as soon as practical, based upon the situation, and submit a written report to CONOC within 4 hours. The initial report shall include the name of the company, location of the incident, time when the incident occurred, a brief description of the events leading up to the incident, and a company point of contact. A follow-up, comprehensive written report shall be provided to the CONOC within 96 hours of the incident. Reports shall be submitted to CONOC at: [mncic3conoc@iraq.centcom.mil](mailto:mncic3conoc@iraq.centcom.mil); DSN 318-435-2369; Iraqna 0044 203 286 9851 or 0044 203 239 5894; or Skype: MNCICONOC.

(c) **AFGHANISTAN:** Contractors shall report all incidents and use of weapons through their Contracting Officers who will notify the JOC Watch at Bagram AB. (JOC SHIFT DIRECTOR, DSN: 318-431-4116; SVOIP: 431-7108) Information should include: the name of the company, where the incident occurred, time when the incident occurred, a brief description of the events leading up to the incident, and a point of contact for the company. The JOC Watch duty officer will issue guidance for further reporting requirements.

(d) Contractors shall provide first aid and request MEDEVAC of injured persons, and remain available for U.S. or Coalition response forces, based upon the situation. In the event contractor personnel are detained by U.S. or Coalition Forces, prolonged detention due to lack of proper identification can be alleviated by contractor personnel possessing on their person information that includes the contractor's name, the contract number, a contractor management POC, and the phone number of the CONOC/JOC Watch.

(END)

### **JCC-I/A CLAUSE 952.225-0003**

### **FITNESS FOR DUTY AND MEDICAL/DENTAL CARE LIMITATIONS**

**(MAR 2009)**

(1) The contractor shall perform the requirements of this contract notwithstanding the fitness for duty of deployed employees, the provisions for care offered under this section, and redeployment of individuals determined to be unfit. The contractor bears the responsibility for ensuring all employees are aware of the conditions and medical treatment available at the performance. The contractor shall include this information and requirement in all subcontracts with performance in the theater of operations.

(2) The contractor shall not deploy an individual with any of the following conditions unless approved by the appropriate CENTCOM Service Component (ie. ARCENT, AFCENT, etc.) Surgeon: Conditions which prevent the wear of personal protective equipment, including protective mask, ballistic helmet, body armor, and chemical/biological protective garments; conditions which prohibit required theater immunizations or medications; conditions or current medical treatment or medications that contraindicate or preclude the use of chemical and biological protectives and antidotes; diabetes mellitus, Type I or II, on pharmacological therapy; symptomatic coronary artery disease, or with myocardial infarction within one year prior to deployment, or within six months of coronary artery bypass graft, coronary artery angioplasty, or stenting; morbid obesity (BMI  $\geq$  40); dysrhythmias or arrhythmias, either symptomatic or requiring medical or electrophysiologic control; uncontrolled hypertension, current heart failure, or automatic implantable defibrillator; therapeutic anticoagulation; malignancy, newly diagnosed or under current treatment, or recently diagnosed/treated and requiring frequent subspecialist surveillance, examination, and/or laboratory testing; dental or oral conditions requiring or likely to require urgent dental care within six months' time, active orthodontic care, conditions requiring prosthodontic care,

conditions with immediate restorative dentistry needs, conditions with a current requirement for oral-maxillofacial surgery; new onset (< 1 year) seizure disorder, or seizure within one year prior to deployment; history of heat stroke; Meniere's Disease or other vertiginous/motion sickness disorder, unless well controlled on medications available in theater; recurrent syncope, ataxias, new diagnosis (< 1 year) of mood disorder, thought disorder, anxiety, somatoform, or dissociative disorder, or personality disorder with mood or thought manifestations; unrepaired hernia; tracheostomy or aphonia; renalithiasis, current; active tuberculosis; pregnancy; unclosed surgical defect, such as external fixator placement; requirement for medical devices using AC power; HIV antibody positivity; psychotic and bipolar disorders. (Reference: Mod 8 to USCENTCOM Individual Protection and Individual/Unit Deployment Policy, PPG-Tab A: Amplification of the Minimal Standards of Fitness for Deployment to the CENTCOM AOR).

(3) In accordance with military directives (DoDI 3020.41, DoDI 6000.11, CFC FRAGO 09-1038, DoD PGI 225.74), resuscitative care, stabilization, hospitalization at Level III (emergency) military treatment facilities and assistance with patient movement in emergencies where loss of life, limb or eyesight could occur will be provided. Hospitalization will be limited to emergency stabilization and short-term medical treatment with an emphasis on return to duty or placement in the patient movement system. Subject to availability at the time of need, a medical treatment facility may provide reimbursable treatment for emergency medical or dental care such as broken bones, lacerations, broken teeth or lost fillings.

**(4) Routine and primary medical care is not authorized. Pharmaceutical services are not authorized for routine or known, routine prescription drug needs of the individual. Routine dental care, examinations and cleanings are not authorized.**

(5) Notwithstanding any other provision of the contract, the contractor shall be liable for any and all medically-related services or transportation rendered. In accordance with OUSD(C) Memorandum dated 4 June 2008, the following reimbursement rates will be charged for services at all DoD deployed medical facilities. These rates are in effect until changed by DoD direction.

(a) Inpatient daily rate: \$2,041.00. Date of discharge is not billed unless the patient is admitted to the hospital and discharged the same day.

(b) Outpatient visit rate: \$195.00. This includes diagnostic imaging, laboratory, pathology, and pharmacy provided at the medical facility.

(END)

**JCC-I/A CLAUSE 952.225-0004  
COMPLIANCE WITH LAWS AND REGULATIONS  
(MAR 2009)**

(a) The Contractor shall comply with, and shall ensure that its employees and its subcontractors and their employees, at all tiers, are aware of and obey all U.S. and Host Nation laws, Federal or DoD regulations, and Central Command orders and directives applicable to personnel in Iraq and Afghanistan, including but not limited to USCENTCOM, Multi-National Force and Multi-National Corps operations and fragmentary orders, instructions, policies and directives.

(b) Contractor employees shall particularly note all laws, regulations, policies, and orders restricting authority to carry firearms, rules for the use of force, and prohibiting sexual or aggravated assault.

Contractor employees are subject to General Orders Number 1, as modified from time to time, including without limitation, their prohibition on privately owned firearms, alcohol, drugs, war souvenirs, pornography and photographing detainees, human casualties or military security measures.

(c) Contractor employees may be ordered removed from secure military installations or the theater of operations by order of the senior military commander of the battle space for acts that disrupt good order and discipline or violate applicable laws, regulations, orders, instructions, policies, or directives. Contractors shall immediately comply with any such order to remove its contractor employee.

(d) Contractor employees performing in the USCENTCOM Area of Operations (AOR) may be subject to the jurisdiction of overlapping criminal codes, including, but not limited to, the Military Extraterritorial Jurisdiction Act (18 U.S.C. Sec. 3261, et al) (MEJA), the Uniform Code of Military Justice (10 U.S.C. Sec. 801, et al)(UCMJ), and the laws of the Host Nation. Non-US citizens may also be subject to the laws of their home country while performing in the USCENTCOM AOR. Contractor employee status in these overlapping criminal jurisdictions may be modified from time to time by the United States, the Host Nation, or by applicable status of forces agreements.

(e) Under MEJA, a person who engages in felony misconduct outside the United States while employed by or accompanying the Armed Forces is subject to arrest, removal and prosecution in United States federal courts. Under the UCMJ, a person serving with or accompanying the Armed Forces in the field during a declared war or contingency operation may be disciplined for a criminal offense, including by referral of charges to a General Court Martial. Contractor employees may be ordered into confinement or placed under conditions that restrict movement within the AOR or administratively attached to a military command pending resolution of a criminal investigation.

(f) Contractors shall immediately notify military law enforcement and the Contracting Officer if they suspect an employee has committed an offense. Contractors shall take any and all reasonable and necessary measures to secure the presence of an employee suspected of a serious felony offense. Contractors shall not knowingly facilitate the departure of an employee suspected of a serious felony offense or violating the Rules for the Use of Force to depart Iraq or Afghanistan without approval from the senior U.S. commander in the country.

(End)

**JCC-I/A CLAUSE 952.225-0005**  
**MONTHLY CONTRACTOR CENSUS REPORTING**  
**(MAR 2009)**

Contractor shall provide monthly employee census information to the Contracting Officer, by province, for this contract. Information shall be submitted either electronically or by hard-copy. Information shall be current as of the 25th day of each month and received by the Contracting Officer no later than the first day of the following month. The following information shall be provided for each province in which work was performed:

- (1) The total number (prime and subcontractors at all tiers) employees.
- (2) The total number (prime and subcontractors at all tiers) of U.S. citizens.
- (3) The total number (prime and subcontractors at all tiers) of local nationals (LN).
- (4) The total number (prime and subcontractors at all tiers) of third-country nationals (TCN).

- (5) Name of province in which the work was performed.
- (6) The names of all company employees who enter and update employee data in the Synchronized Predeployment & Operational Tracker (SPOT) IAW DFARS 252.225-7040 or DFARS DOD class deviation 2007-O0010.

(END)

**JCC-I/A CLAUSE 952.225-0009**

**MEDICAL SCREENING AND VACCINATION REQUIREMENTS FOR LOCALLY HIRED EMPLOYEES**

**(MAR 2009)**

- (a) Contractors, and subcontractors at any tier shall ensure and provide satisfactory evidence that all locally hired employees, including Local National (LN), Third Country National, and U.S. employees, working on military have been screened for and do not currently have active tuberculosis (TB).
- (1) Contractors may utilize a testing method of either a chest x-ray or TB skin test (TST).
- (i) Chest x-rays shall be taken and TBTs administered within 90 days prior to the start of employment.
- (ii) Screening may be performed either by a licensed medical provider from the local economy or by contractors' licensed medical staffs. Contractors shall maintain medical screening documentation and make it available to the Contracting Officer upon request.
- (2) TB screening documentation will be required by the responsible Base Defense Operations Center (BDOC) prior to issuance of base access badges.
- (b) Contractor employees, including subcontractors at any tier, who work in positions where they are working with food or water production and distribution shall have current Typhoid and Hepatitis "A" (full series) vaccinations, in addition to the TB tests required above.
- (a) At least the first inoculation in the Hepatitis "A" series must be given prior to the start of employment, with continuation and completion of the inoculation series. The Typhoid inoculation must be completed within two years prior to the date of employment in the food and water service capacity.
- (i) Once the complete Hepatitis "A" vaccination series is completed, it does not have to be repeated. The Typhoid vaccination requires a booster immunization every three years.
- (ii) Proof of individual employee vaccinations shall be provided to the Contracting Officer and maintained by the Contractor for examination by the Contracting Officer.

**JCC-I/A CLAUSE 952.225-0001**

**ARMING REQUIREMENTS AND PROCEDURES FOR PERSONAL SECURITY SERVICES CONTRACTORS AND FOR REQUESTS FOR PERSONAL PROTECTION**

**(MAR 2009)**

**General.** Contractor and its subcontractors at all tiers that require arming under this contract agree to obey all laws, regulations, orders, and directives applicable to the use of private security personnel in Iraq and Afghanistan, including U.S. CENTCOM, Multi-National Force Commander and Multi-National Corps Commander orders, instructions and directives. Contractors will ensure that all employees, including employees at any tier of subcontracting relationships, armed under the provisions of this contract, comply with the contents of this clause and with the requirements set forth in the following:

DODI 3020.41, *Program Management for Acquisition and Operational Contract Support in Contingency Operations*;

DFARS 252.225-7040, *Contractor Personnel Supporting a Force Deployed Outside the United States*;

Class Deviation 2007-O0010, Contractor Personnel in the United States Central Command Area of Responsibility  
CPA Order #17, *Registration Requirements for Private Security Companies*, dated 27 Jun 04;  
U.S. CENTCOM Policy Letter, Mod 1, *Personal Protection and Contract Security Service Arming*, dated 7 Nov 2006

***Required Government Documentation.*** The unit requesting the contractor security shall provide a description of the following to the arming approval authority and to the contracting officer:

The specific location where the PSC will operate;  
The persons and/or property that require protection;  
The anticipated threat;  
The required weapon types; and  
The reason current security/police forces are inadequate.

***Required Contractor Documentation.*** Contractors and their subcontractors at all tiers that require arming approval shall provide the following to the contracting officer representative (COR):

Documentation that each employee who will be armed under the contract received the following training—

Weapons Qualification/Familiarization. All employees must meet the qualification requirements established by any DoD or other U.S. government agency Law of Armed Conflict (LOAC); Rules for the Use of Force (RUF), as defined in the U.S. CENTCOM Policy, dated 23 December 2005; and Distinction between the above-prescribed RUF and the Rules of Engagement (ROE), which are applicable only to military forces.

Completed DD Form 2760 (or equivalent documentation) for each armed employee, indicating that the employee is not otherwise prohibited under U.S. law from possessing the required weapon or ammunition.

One (1) copy of a business license from the Iraqi or Afghani Ministry of Trade or Interior;

One (1) copy of an operating license (or a temporary operating license) from the Ministry of Interior;

A communications plan that, at a minimum, sets forth the following:

The contractor's method of notifying military forces and requesting assistance where hostilities arise or combat action is needed;

How relevant threat information will be shared between contractor security personnel and U.S. military forces; and

How the contractor will coordinate transportation with appropriate military authorities.

An acceptable plan for accomplishing background checks on all contractor and subcontractor employees who will be armed under the contract. The contractor shall, at a minimum, perform the following (which will be specifically addressed in its plan and which will be documented and furnished to the COR upon completion):

Use one or more of the following sources when conducting the background checks:

Interpol, FBI, Country of Origin Criminal Records, Country of Origin U.S. Embassy Information Request, CIA records, and/or any other records available;

Verify with MNC-I or Afghanistan RCE – CG Provost Marshal that no employee has been barred by any commander within Iraq or Afghanistan; and

Certify, after completing all checks, that all persons armed under this contract are not prohibited under U.S. law from possessing a weapon or ammunition.

***Required Contractor Acknowledgements.*** Contractors and their subcontractors at all tiers that require arming approval will provide written acknowledgement of the following to the COR:

**Penalties for Non-Compliance.** Failure of contractor or subcontractor employee(s) to comply with the laws, regulations, orders, and rules (including those specified herein) governing the use of force may result in the revocation of weapons authorization for such employee(s). Where appropriate, such failure may also result in the total revocation of weapons authorization for the contractor (or subcontractor) and sanctions under the contract, including termination.

**Criminal and Civil Liability.** Arming of contractor or subcontractor employees under this contract may subject the contractor, its subcontractors, and persons employed by the same, to U.S. and Host Nation prosecution and civil liability. "Host Nation" refers to the nation or nations where services under this contract are performed.

**Lapses in Training.** Failure to successfully retrain an employee who is armed under this contract within twelve (12) months of the last training date will constitute a lapse in the employee's authorization to possess and carry the weapon. All unauthorized employees will immediately surrender their weapon to the contractor and will remain unarmed until such time as they are retrained and the COR determines that the retraining is sufficient.

***Authorized Weapon & Ammunition Types.*** Unless DCDRUSCENTCOM (or a designee) provides otherwise, all arming requests and authorizations for contractor or subcontractor employees under this contract shall be limited to U.S. Government approved weapons and ammunition. This restriction applies to all weapons in the possession of contractor employees, even if such weapons are required for personal protection. The following weapons and ammunition are currently authorized by the U.S. Government for use in Iraq and Afghanistan:

The M9, M4, M16, or equivalent (e.g. .45 CAL, AK-47).

The M9 or equivalent sidearm will be the standard personal protection weapon unless other weapons are specifically requested and approved.

U.S. government Ball ammunition is the standard approved ammunition.

***Requirements for Individual Weapons Possession.*** All employees of the contractor and its subcontractors at all tiers who are armed under this contract must:

Possess only those U.S. Government-approved weapons and ammunition for which they are qualified under the training requirements of section (c);

Carry weapons only when on duty or at a specific post;

Not conceal any weapons, unless specifically authorized;

Carry proof of authorization to be armed. Employees not possessing such proof will be deemed unauthorized and must surrender their weapon to their employer; and

IAW USCENCOM G.O. #1, consumption of alcohol in Iraq or Afghanistan is prohibited. In the event of a suspension or an exception to G.O. #1, employees shall not consume any alcoholic beverage while armed or within eight (8) hours of the next work period where they will be armed.

***Weapons/Equipment Restrictions and Responsibilities.*** Unless otherwise provided, the U.S. Government will not provide any weapons or ammunition to contractors, their subcontractors, or any employees of the same. The Contractor will provide all weapons and ammunition to those employees that will be armed under the contract. The contractor and its subcontractors at all tiers will also provide interceptor body armor, ballistic helmets, and the Nuclear, Biological, and Chemical (NBC) protective masks to those employees that require such equipment in the performance of their duties.

***Rules for the Use of Force (RUF).*** In addition to the RUF and ROE training referenced in paragraph (c), the contractor and its subcontractors at all tiers will monitor and report all activities of its armed

employees that may violate the RUF. Prompt reporting demonstrates a desire by the contractor and its subcontractors to minimize the impact of any violations and, therefore, will be given favorable consideration. Violations of the RUF include, though are not limited to:

Taking a direct part in hostilities or combat actions, other than to exercise self-defense;

Failing to cooperate with Coalition and Host Nation forces;

Using deadly force, other than in self-defense where there is a reasonable belief of imminent risk of death or serious bodily harm;

Failing to use a graduated force approach;

Failing to treat the local civilians with humanity or respect; and

Detaining local civilians, other than in self-defense or as reflected in the contract terms.

***Retention and Review of Records.*** The Contractor and all subcontractors at all tiers shall maintain records on weapons training, LOAC, RUF and the screening of employees for at least six (6) months following the expiration (or termination) of the contract. The Contractor and its subcontractors at all tiers shall make these records available to the Contracting Officer or designated representative, at no additional cost to the government, within 72 hours of a request.

***Contractor Vehicles.*** Vehicles used by contractor and subcontractor personnel in the course of their security duties shall not be painted or marked to resemble U.S./Coalition or host nation military and police force vehicles.

***Quarterly Reporting.*** The prime contractor will report quarterly (i.e. NLT 1 January, 1 April, 1 July and 1 October for each quarter of the calendar year) to the Contracting Officer responsible for this contract, and any other organization designated by the Contracting Officer, the following information under this contract:

The total number of armed civilians and contractors;

The names and contact information of its subcontractors at all tiers; and

A general assessment of the threat conditions, adequacy of force numbers, and any problems that might require a change to force levels. Note: this information is in addition to the information the contractor promises to immediately provide under the communications plan referenced at paragraph (c)(5).

(END)

#### **JCC-I/A CLAUSE 952.236-0001**

#### **ELECTRICAL AND STRUCTURAL BUILDING STANDARDS FOR CONSTRUCTION PROJECTS**

**(MAR 2009)**

(a) The standards set forth herein are the minimum requirements for the contract. These standards must be followed unless a more stringent standard is specifically included. In such case the most stringent standard shall be required for contract acceptance.

(b) The contractor, in coordination with the Contracting Officer, Base Camp Mayor, Base/Unit Engineers, and requiring activity shall evaluate, upgrade, build, and/or refurbish buildings to a safe and livable condition. This work may include refurbishment, construction, alterations, and upgrades. All work shall be in accordance with accepted standards of quality.

(c) As dictated by the Unified Facilities Criteria (UFC) the contract shall meet:

(1) "the minimum requirements of United States' National Fire Protection Association



- (NFPA) 70,
- (2) National Electrical Code (NEC),
- (3) the American National Standards Institute (ANSI) C2, and
- (4) the United States' National Electrical Safety Code (NESC).

(d) These standards must be met when it is reasonable to do so with available materials. When conditions dictate deviation, then provisions within the International Electrical Code (IEC) or British Standard (BS 7671) shall be followed. Any deviations from the above necessary to reflect market conditions, shall receive prior written approval from a qualified engineer and the Contracting Officer.

(e) The following internet links provide access to some of these standards:

UFC: [http://65.204.17.188/report/doc\\_ufc.html](http://65.204.17.188/report/doc_ufc.html)

NFPA 70: <http://www.nfpa.org>

NESC: <http://www.standards.ieee.org/nesc>

(END)

**JCC-I/A CLAUSE 952.225-0010**  
**CONTRACTOR EMPLOYEE LEGAL REQUIREMENTS**  
**(MAR 2009)**

(a) The contractor shall not employ, nor allow a subcontractor to employ, any person that has ever been convicted, in any U.S. court, including a court-martial, of any crime against an Iraqi and/or an Afghan national, regardless of the place at which the crime occurred.

(b) For the purpose of this clause, "crime" is defined as: "a violation of a law in which there is injury to the public or a member of the public and a term in jail or prison, and/or a fine as possible penalties." Further, the crime must be an offense that could be classified as a Class B misdemeanor, or any higher class up to a Class A felony, as referenced at 18 USC §3559.

(c) Contractors shall exercise effective screening processes to ensure that individuals not conforming to this standard are identified and prohibited from, or removed from (if already employed) working under this contract.

(d) Contractor employees discovered to have one of more prior convictions as described above shall be removed from the contract at the contractor's expense.

(e) Failure to adhere to the requirements of this clause could result in a termination for cause or termination for default, in accordance with the terms and conditions of this contract.

(END)

**WORKERS COMPENSATION INSURANCE (DEFENSE BASE ACT) – SECURITY (OCT 2009)**

(a) This Special Contract Requirement supplements FAR Clause 52.228-3 Workers' Compensation Insurance (Defense Base Act).

(b) The contractor agrees to procure Defense Base Act (DBA) insurance pursuant to the terms of the contract between the U.S. Army Corps of Engineers (USACE) and **CNA Insurance** unless the contractor has a DBA self-

insurance program approved by the Department of Labor. Proof of this self-insurance shall be provided to the Contracting Officer. The contractor shall submit proof of a valid DBA Insurance policy with CNA Insurance for the Prime and their Subcontractor's at every tier prior to performance of the contract. The current rate under the USACE and JCC-I/A contract is **\$10.00 per \$100 of compensation for security**.

- (c) The contractor agrees to insert a Special Contract Requirement substantially the same as this one in all subcontracts (at every tier) to which DBA is applicable.
- (d) Should the rates for DBA insurance coverage increase or decrease during the performance of this contract, USACE shall modify the contract accordingly. However, the revised rates will not be applicable until the Contractor's or Subcontractor's DBA Insurance policy is due to be renewed.
- (e) Premiums will be reimbursed only if coverage is purchased through the USACE mandatory requirements DBA contract administered by CNA Insurance and their Managing Broker, Rutherford International.
- (f) Claims Reporting - The Contractor shall make timely Defense Base Act insurance claims on behalf of each employee who is injured or killed in the course of their employment under this contract, and shall ensure that similar language is in each Subcontractor's contract. The Contractor's Safety Officer shall, in addition to any other duties required to be performed under the contract, perform the following:
  - (i) Make timely Defense Base Act insurance claims on behalf of each employee who is injured or killed in the course of their employment under this contract; and
  - (ii) Make monthly written reports to the Contracting Officer, Administrative Contracting Officer, and the District/Center Safety and Occupational Health Manager, providing the names of each such injured or deceased employee, the circumstances surrounding each injury or death, the dates of each injury or death, the date the insurance claim was made on behalf of each employee, and the current status of each claim.

The District/Center Safety and Occupational Health Manager POC is: Mr. John Blandamer, 540-665-3471

(g) Failure to comply and purchase Defense Base Act (DBA) Insurance in accordance with FAR Clauses 52.228-3 Workers' Compensation Insurance (Defense Base Act), from the U.S. Army Corps of Engineers mandatory Insurance Carrier/Broker (CNA Insurance/Rutherford International) for the Prime and all of the Subcontractors at every tier, shall be considered a material breach and could cause your contract to be terminated for default/cause.

#### **WORKERS COMPENSATION INSURANCE (DEFENSE BASE ACT) –CONSTRUCTION (OCT 2009)**

- (a) This Special Contract Requirement supplements FAR Clause 52.228-3 Workers' Compensation Insurance (Defense Base Act).
- (b) The contractor agrees to procure Defense Base Act (DBA) insurance pursuant to the terms of the contract between the U.S. Army Corps of Engineers (USACE) and CNA Insurance unless the contractor has a DBA self-insurance program approved by the Department of Labor. Proof of this self-insurance shall be provided to the Contracting Officer. The contractor shall submit proof of a valid DBA Insurance policy with CNA Insurance for the Prime and their Subcontractor's at every tier prior to performance of the contract. The current rate under the USACE and JCC-I/A contract is \$6.00 per \$100 of compensation for construction.
- (c) The contractor agrees to insert a Special Contract Requirement substantially the same as this one in all subcontracts (at every tier) to which DBA is applicable.
- (d) Should the rates for DBA insurance coverage increase or decrease during the performance of this contract, USACE shall modify the contract accordingly. However, the revised rates will not be applicable until the Contractor's or Subcontractor's DBA Insurance policy is due to be renewed.

(e) Premiums will be reimbursed only if coverage is purchased through the USACE mandatory requirements DBA contract administered by CNA Insurance and their Managing Broker, Rutherford International.

(f) Claims Reporting - The Contractor shall make timely Defense Base Act insurance claims on behalf of each employee who is injured or killed in the course of their employment under this contract, and shall ensure that similar language is in each Subcontractor's contract. The Contractor's Safety Officer shall, in addition to any other duties required to be performed under the contract, perform the following:

(i) Make timely Defense Base Act insurance claims on behalf of each employee who is injured or killed in the course of their employment under this contract; and

(ii) Make monthly written reports to the Contracting Officer, Administrative Contracting Officer, and the District/Center Safety and Occupational Health Manager, providing the names of each such injured or deceased employee, the circumstances surrounding each injury or death, the dates of each injury or death, the date the insurance claim was made on behalf of each employee, and the current status of each claim.

The District/Center Safety and Occupational Health Manager POC is: Mr. John Blandamer, 540-665-3471

(g) Failure to comply and purchase Defense Base Act (DBA) Insurance in accordance with FAR Clauses 52.228-3 Workers' Compensation Insurance (Defense Base Act), from the U.S. Army Corps of Engineers mandatory Insurance Carrier/Broker (CNA Insurance/Rutherford International) for the Prime and all of the Subcontractors at every tier, shall be considered a material breach and could cause your contract to be terminated for default/cause.

#### SECTION 01010 SOW

### **SECTION 01010**

### **SCOPE OF WORK**

#### **GENERAL**

- g. It is the intention of the Government to award one IDIQ Contract to up to five companies who have demonstrated they are technically acceptable and capable of completing construction in the areas identified throughout this document. The enclosed security upgrade task order for the Gardez Garrison shall be used as part of the evaluation and selection process of possibly five companies for the IDIQ Contract. The initial selection of the offerors shall be based on the, BEST VALUE method. Subsequent task orders that follow under this IDIQ Contract shall be awarded based on "LOWEST PRICE" to one of the possibly five prequalified IDIQ Contractors.
- h. This Scope of Work sets forth the general requirements for the performance of the various Contractor services including site-adapt design service, vertical and horizontal construction and construction management and oversight required to refurbish or construct facilities on existing Afghan National Security Forces (ANSF) sites that include, but are not limited to: security perimeter fencing, enclosures (steel or concrete), reinforced guard towers, observation towers, control points and other buildings with 3-D panel walls, sandwich panels, CMU and interior security walls, road construction and road repair, steel reinforced concrete walls, reinforced stone masonry walls, concrete reinforced buildings, water, and sewage connections, steel truck gates, sliding and swing gates, drop arm barriers, fortified fighting positions, electrical upgrades and installation of perimeter lighting, personnel bunkers, chain link fencing, painting, roofing repairs, repair or replacement of drainage structures, above ground storage tanks with

standard containment dikes and containment dikes which serve as both containment of spills and protective blast wall, vehicle refueling point with pump, reinforced concrete pads, installation of barriers (HESCO, Alaska, jersey-type traffic barriers, and others), barbed and or concertina wire, sniper screen, and other items as required under this indefinite-delivery indefinite-quantity contract.

- i. Work shall be executed in accordance with the Technical Requirements in Section 01015 and the specific task order requirements and drawings contained within each task order.
- j. Task Order Statements of Work will vary for each project depending on the specific project requirements. Pricing schedules will also be included with each task order. Contractors who qualify technically and are awarded the IDIQ contract will price each task order individually and compete with other contractors awarded under the IDIQ. The Contractor will act as an independent Contractor and not as an agent of the U.S. Government and shall, in accordance with the terms and conditions of the contract, furnish all labor and supervisory management required for the performance of the work that will be described in separately issued task order scopes of work. It shall be the responsibility of the contractor that all supervisors/foremen are capable of receiving the appropriate clearance at the respective sites and appropriate security levels.

## **REQUIREMENTS**

The Contractor shall furnish, as applicable and required by individual task orders, all labor, facilities, supplies, equipment and material, and do all things necessary for the performance of the work described in the various task order scopes of work. In addition, the Contractor shall furnish all required personnel, equipment, instruments, transportation, etc., as necessary to accomplish the required site-adapt, construction and service contract management as well as site adapt design services that are required.

## **SAFETY**

The Contractor shall be responsible for providing all life-support and security services required for its personnel deployed to project locations except when it is expressly stated in individual task orders that such facilities and services are to be provided by the Government. This includes all life support, communications, transportation of materials, personnel, and equipment to work sites unless otherwise specified in the separate task orders. The Contractor may be required to provide similar services to U.S. Government personnel when so specified in a task order. In addition, the Contractor is responsible for maintaining the security of its personnel, materials, and equipment commensurate with the circumstances involved. The Contractor shall propose a price per person per year for each contract year for providing these services (see Section B, Supplies or Services and Prices).

## **GOVERNMENT PROVIDED SERVICES**

Should the individual task orders indicate that the Government will provide transportation, facilities, equipment, materials or other physical items or services for the use of the Contractor in the performance of the work, the Contractor shall avail itself of such Government furnished facilities and services to the maximum extent practicable. The Contractor shall take due care to conserve the use of Government provided services and consumable materials as well as to protect, maintain and preserve all physical items for return to the Government when no longer needed in the performance of its contract work.

## **CONTRACTOR SAFETY**

The Contractor shall be prepared to take appropriate actions in order to provide for its own safety and security and the safety and security of its employees. The Contractor shall avail itself of authorized safety and security protections and services. The Contractor shall prepare a comprehensive safety and security plan pertaining to all aspects of its activities and the activities of its employees in the performance of all work related to this contract as well as the off-duty activities of its employees serving in Afghanistan or elsewhere within the region as it relates to

performance of this contract. The Contractor shall continuously monitor and update this comprehensive safety and security plan by means of a dedicated, qualified and competent staff of personnel. The Contractor shall closely work with and establish liaison and cooperate with all authorized and appropriate safety and security organizations and entities for the protection and safety of its operations and employees.

## **REPORTS**

The Contractor shall furnish the Government with required reports and other information and data together with supporting materials in order to substantiate the quality and accuracy of the services provided and the work performed. The Contractor shall maintain and make accessible to the Government's representatives the cost accounting information required by the contract and as required by the Federal Acquisition Regulations (FAR) and its applicable supplemental regulations. During the prosecution of the work, the Contractor shall provide the professional supervision and quality control that is necessary in order to assure the accuracy, quality, completeness, and progress of the services provided and the work performed.

## **CONFIDENTIALITY**

The Contractor shall maintain at all times the confidentiality of proprietary information pertaining to other construction Contractors, service providers or Contractor firms with whom its employees come into contact during the course of their performance of work pertaining to this contract or as the result of working in proximity to such information. The Contractor shall institute procedures acceptable to the Contracting Officer and fully comply with the Government's procedures for maintaining the confidentiality of information and the maintaining of Federal procurement integrity standards of performance. All Contractor employees will be required to maintain the security and confidentiality of all information that directly or indirectly comes into their possession or attention on a strict operational need-to-know basis. The Contractor's management and supervisory personnel will not seek after, receive or otherwise have access to operational information or data that is being utilized by its employees in the performance of this contract where other companies, firms or Contractors are involved or where such information is confidential to the interests of the U.S. Government and or its clients and customers. This prohibition does not preclude the Contractor's appropriate management and supervisory staff from having access to information needed in the process of addressing Government observations pertaining to less than satisfactory work performance by its employees. Nevertheless, in all such cases, access to such information will be kept to the minimum necessary for correction or resolution of those performance complaints and will be handled in accordance with the highest degrees of integrity and professional conduct.

## **RECORD KEEPING**

The Contractor shall maintain and preserve all records and information whether in electronic, audio, video or paper format that is directly or indirectly generated during performance of its work in regard to this contract in an orderly and readily accessible manner. All documents created as the result of operational activities in conjunction with work being performed as the direct or indirect result of scopes of work contained within the issued task orders are to be considered as the property of the U.S. Government in addition to being the work product of the Contractor.

## **CONSTRUCTION MANAGEMENT**

In the execution of task orders under this contract, the Contractor will not be permitted to perform construction management or quality assurance duties on projects for which the Contractor firm, or its affiliated companies, is also performing the construction or providing the service being monitored.

## **QUALITY CONTROL**

The Contractor's quality control manager is required to take the Construction Quality Management (CQM) training course that will be offered periodically by AED. This course is presented to allow contractors to meet AED's construction contract requirements for the training of contractor quality control personnel. Corps of Engineers

Guide Specification 01451, entitled “Contractor Quality Control”, requires approval of the contractor's quality control manager being contingent upon the successful completion of this course.

#### **PERIOD OF PERFORMANCE**

The period of performance of this contract shall be one (1) year (with options)

#### **LOCATION AND TYPES OF WORK**

##### **LOCATION**

The primary location of the services to be provided and the work to be performed under this contract is at ANSF facilities throughout Afghanistan.

##### **PROJECT TYPES**

Work to be performed under this contract may contain, but shall not be limited to, items listed below. Work included in the task orders will be specified and construction may require specific skills in the fields of civil, architectural, mechanical, and electrical engineering – design and installation.

##### **BUILDINGS**

- k. Guard shack
- l. Guard house 1 story
- m. Guard house 2 story
- n. Guard Tower
- o. Quick Response or Reaction Force Building (QRF building)
- p. Personnel Bunkers
- q. Covered Carport
- r. Overhead Canopy
- s. Change / Locker Facility
- t. ID Pass / Reception Building

##### **FENCES AND WALLS (WITH AND WITHOUT CONCERTINA WIRE, BARBED WIRE, SNIPER SCREEN)**

- u. Stone Rubble Wall
- v. Stucco Veneer Wall

- w. Stone Veneer Wall
- x. CMU wall
- y. Retaining wall cross section and Chain link fence

#### **GATES AND BARRIERS**

- z. Concrete (Hesco, Alaska, T-barrier, Jersey, etc)
- aa. Chain link swing gates (pedestrian and vehicle)
- bb. Chain link sliding gates (vehicle)
- cc. Sliding Gates
- dd. Drop arm Barriers
- ee. Powered Barriers

#### **ROAD**

- ff. Parking areas
- gg. Paved roads
- hh. Aggregate roads
- ii. Speed bumps
- jj. Tire shredders and spike strips
- kk. Aggregate surface road
- ll. Asphalt –macadam surface road

#### **OTHER**

- mm. Mounted Fighting Positions
- nn. Dismounted Fighting Positions
- oo. ECP Configurations
- pp. Concrete Pads (reinforced or non-reinforced)
- qq. Compound Illumination

- rr. Security and Communication Systems
- ss. Trash Point
- tt. Conex Storage Container

#### **TANKS, CONTAINMENT, FUEL**

- uu. Aboveground Storage Tanks (AST)
- vv. Tank Secondary Containment with Spill Valve
- ww. Tank Secondary containment with Spill Valve and Perimeter Security Walls
- xx. Refueling Point Secondary Containment
- yy. Oil/Water Separators
- zz. Vehicle Refueling Point with Pump

#### **WATER SYSTEM ADDITIONS AND MODIFICATIONS**

- aaa. Well Pump (electric)
- bbb. Well Pump (hand)
- ccc. Well House
- ddd. Hydropneumatic System
- eee. Booster Pump Stations
- fff. Water Storage Tanks
- ggg. Chlorination System
- hhh. Piping

#### **SANITARY SEWER SYSTEM ADDITIONS AND MODIFICATIONS**

- iii. Septic Tanks
- jjj. Collection Systems
- kkk. Piping
- lll. Manholes



- mmm. Grease Interceptors
- nnn. Wastewater Treatment Plants
- ooo. Sewage Holding Tanks
- ppp. Leach Fields

## **STORM DRAINAGE**

- qqq. Culverts and Headwalls
- rrr. Driveway crossing a ditch with a culvert details (typical)
- sss. Concrete box drainage with metal grate cross section and details
- ttt. Concrete lined swale and drainage ditch (trapezoidal and rectangular)

## **CIVIL WORK**

- uuu. Demolition
- vvv. Grading and drainage
- www. Geotechnical Investigations

## **SERVICES TO BE PERFORMED**

The Contractor may be required to perform all or part of the following: site-adapt and construction, construction management, contract performance support, and site-adapt design services. The specific nature of the work to be performed will be as contained within the individual task order scopes of work. It is the intent of this contract to issue work by means of separate task orders on behalf of the U.S. Army Corps of Engineers Afghanistan Engineer District (AED) (or the AED's successor organization). (The Government intends to issue task orders to one or the others of the anticipated Contractor firms in such a manner as to eliminate conflicts of interest that might occur as the result of a Contractor firm being in a position to monitor its own involvement in construction or design activities because of a contract award resulting from another procurement action.) A full range of services may be required, from the initial stages of program development and planning, through all aspects of design that may be performed by either the Contractor or others, to the end result of completion of a construction project or service contract including the turnover of facilities constructed or completion of the required services. The Contractor is expected to demonstrate a high degree of flexibility by providing design-construct services, construction management, service contract performance oversight, design services, and administrative services involving the fullest range of management, administrative, planning, engineering, quality assurance, construction oversight, and project closeout activities associated with all aspects of the development of road infrastructure associated with the present and foreseeable future situation that might develop within Afghanistan. It is not the intent of this contract that the Contractor fill positions or fulfill responsibilities of positions which are considered to be inherently Governmental,

i.e., those that are reserved by statute or regulations to be performed by military or civilian employees of the U.S. Government (such as Contracting Officers of various types and kinds, resident and area engineers, etc.).

## **MANAGEMENT AND SUPERVISORY RESPONSIBILITIES**

- xxx. Direct supervision of Contractor personnel assigned to work on this contract within Afghanistan regarding matters pertaining to specific work assignments and the quality of performance of those Contractor personnel are the direct responsibility of the Contractor. As a practical matter, Government personnel may, on a frequent basis, directly co-ordinate with or provide guidance and or other types of information to Contractor personnel concerning the technical or administrative aspects of work being performed. This is particularly true in those instances where Government and Contractor personnel are working in close proximity with one another. However, at all times the direct lines of communication for establishing work requirements and standards of quality shall come through the Contractor's management chain of supervision. As such, the Contractor is expected to establish a sufficient managerial and supervisory structure to ensure that work being performed by Contractor personnel is in accordance with the various task order scopes of work involved and that the quality of work being performed by Contractor personnel is representative of the Contractor's best professional standards. The Government's comments pertaining to less than acceptable performance of work by Contractor personnel will be conveyed from appropriate Government representatives to the designated Contractor management personnel for resolution or correction.
- yyy. The Contractor shall appoint at least one senior program manager to be located in Afghanistan, with assistant program managers as determined appropriate by the Contractor and the Contracting Officer. Other program or assistant program managers may be appointed and located outside Afghanistan as determined appropriate and necessary for quality contract performance. The within-Afghanistan program manager is required to have a management and supervisory staff of sufficient size to coordinate, supervise and monitor the work of its other employees that may be assigned to various Government offices. This management and supervisory staff can be either stationed at fixed locations or at least semi-mobile as the circumstances involved determine to be most appropriate. The Contractor's management staff will be presented to the Contracting Officer for review and approval. This managerial and supervisory structure shall be organized in such a manner as to be capable of expansion and reduction as needed by the numbers of personnel serving in Afghanistan. The Contractor's in-country program manager shall directly coordinate with the Contracting Officer's senior in-country representative concerning such matters as Contractor performance on task order scopes of work and compliance with security and safety laws and regulations affecting the Contractor's employees.

## **QUALITY ASSURANCE, CONSTRUCTION AND TECHNICAL SERVICES RESPONSIBILITIES:**

- zzz. Prepares site-adapt design and/or construction submittals. Monitor the timeliness of all such submittals in order to ensure their completion within the time frames required by the contracts involved. Monitor the Contractor's (site-adapt design, construction, or service) submittal log and advise the Government of late or overdue submittals.
- aaaa. Constructs site-adapt projects in accordance with approved plans and technical specifications for each task order.
- bbbb. Prepare and update quality control plans and procedures tailored to the construction projects involved or services to be provided. Perform the quality control inspection and testing activities and fully document those activities.
- cccc. Conduct or cause to be conducted the full range of quality control inspections and testing in order to substantiate or otherwise verify the suitability of in-place work, materials and equipment for services provided. Testing may require the Contractor to provide appropriate testing equipment, if unavailable within local testing laboratories.

- dddd. Assist or represent the Government at preparatory inspections held prior to the commencement of the work. Prior to conducting preparatory inspections, perform all appropriate preliminary activities such as insuring that, where appropriate, the correct site location, layout and elevations of the work have been established. Verify that all required preliminary actions have been taken such as submittal, review, and approval of shop drawings; approved materials, supplies and equipment are on hand in the quantities required; safety job hazard analyses have been prepared and approved; qualified workmen are available and properly prepared; field supervisory staff is knowledgeable and qualified; appropriate testing equipment is on hand, properly calibrated and functioning; and any required manufacturer's technical representatives or specialists are available. Prepare written reports in a timely manner that document all aspects of preparatory inspections.
- eeee. Attend initiatory and follow-up inspections in accordance with approved and applicable quality control plans and fully document the results of those inspections.
- ffff. Perform review of daily quality control and safety reports to assure that the quality control operations are adequately documented (including such activities as level of inspections, inspection results, testing procedures and results, deficiency correction actions, etc.) and that work is being performed in a safe manner. Provide daily quality assurance inspections and surveillance of quality control programs and safety programs to ensure compliance with contract requirements. Review ongoing construction work or services being provided to verify that materials and workmanship or services conform to contract requirements.
- gggg. Attend and participate in meetings such as pre-construction and pre-performance conferences, quality control coordination meetings, progress meetings, or other conferences and meetings held between the Government's representatives and Contractor. Act as recorder and prepare minutes of such meetings to be made final within two working days.
- hhhh. Maintain master sets of drawings and specifications for the use by Contractor and Government personnel in the performance of quality control and assurance, technical services and contract administration activities.
- iiii. Conduct as-built activities and ensure that those documents are being prepared on an ongoing basis. Review submissions of as-built drawings for completeness and accuracy.
- jjjj. Establish and maintain the appropriate number and sizes of technical libraries to ensure the appropriate degree of access by quality assurance, technical services and contract administrative personnel.
- kkkk. In the performance of these duties, the Contractor shall be required to use the Corps' of Engineers automated construction contract administration and reporting system, RMS (Resident Management System).

#### **CONTRACT ADMINISTRATION RESPONSIBILITIES:**

- llll. Prepare overall project construction and performance schedules in the form of Critical Path Method-Network Analysis System (CPM-NAS) utilizing software acceptable to the Contracting Officer, incorporating all requirements of the construction or service requirements.
- mmmm. Review, evaluate, and provide construction or performance time and cost impact estimates of proposed or actual change orders to contracts.
- nnnn. Prepare required documentation in support of processing Contractor payments. Provide technical and construction information as required to ensure that construction work placement, performance of services, and the Contractors' administration and management activities meet all contract requirements.

- oooo. Prepare contract closeout and turnover documentation pertaining to construction according to contract requirements.
- pppp. Develop and maintain an automated data base of cost estimating information pertaining to labor rates, material and supply pricing, and equipment ownership and operations costs in compliance with U.S. Army Corps of Engineers systems, or as otherwise directed by the Contracting Officer.
- qqqq. In the performance of these duties, the Contractor shall be required to use the Corps' of Engineers automated construction contract administration and reporting system, RMS (Resident Management System).

#### **PROJECT COMPLETION AND TURNOVER ACTIVITIES:**

Prepare and submit final as-built drawings of completed work.

#### **HEALTH AND SAFETY STANDARDS AND ACTIVITIES:**

##### **CERTIFICATIONS**

Contractor safety personnel shall be fully qualified and possessing of the commensurate appropriate training and certifications. These personnel will be fully conversant with the latest U.S. Army Corps of Engineers' safety publications (e.g., EM385-1-1) as well as all other applicable health and safety regulations, codes and standards.

#### **UNEXPLODED ORDNANCE (UXO) DISCOVERY DURING PROJECT CONSTRUCTION**

The contractor is not responsible for the clearance or removal of mines and unexploded ordnance (UXO) from the site prior to the commencement of construction. The site has been cleared to a minimum depth of 1 meter and the certificate of clearance is available for review. No construction activities are to be conducted without review of the written clearance certification for the site. If sub-surface construction activities will be performed on this site the clearance certification must state that the clearance depth was conducted to a minimum 1 meter in depth.

NOTE 1: For previous UXO/mine information, and a copy of the clearance certification the following points of contact from the UN Mine Action Center of Afghanistan are provided:

Mohammad Sediq, Chief of Operations,  
Email: [sediq@unmaca.org](mailto:sediq@unmaca.org)  
Cell: +93 070 295207

Hansie Heymans, Chief Information Officer,  
Email: [hansie@unmaca.org](mailto:hansie@unmaca.org)  
Cell: +93 070 294286

NOTE 2: The contractor should be aware that many areas demined by NGOs and other groups may have only been cleared to a depth of 13 cm for humanitarian purposes. If construction will take place, a minimum of 1 meter in depth is mandatory.

It is the responsibility of the Contractor to be aware of the risk of encountering UXO/mines and to take all actions necessary to assure a safe work area to perform the requirements of this contract. The Contractor assumes the risk of any and all personal injury, property damage or other liability arising out of or resulting from any Contractor action taken hereunder. The Contractor and its subcontractors may not handle, work with, move, transport, render safe, or disarm any UXO/mine, unless they have appropriate accreditations from the MAC.

If a UXO/mine is encountered during project construction, the Contractor shall immediately stop work in the affected area, mark the area of the UXO/Mine and immediately notify the Contracting Officer, COR or the Government Construction Representative. UXO/mine disposal will not be the responsibility of the Contractor.

UXO/mine disposal shall be handled in accordance with Section 01015, Technical Requirements.

## **CONTRACTOR SITE-ADAPT ACTIVITIES**

Unless specifically noted in the task order, site-adapt requirements are limited to requirements not shown on plans and specifications already furnished to the Contractor as part of this contract. The Contractor, as required by individual task order scopes of work, shall perform all site-adapt design or architect-engineering work required to accomplish the intent of such task order. Unless otherwise specifically provided therein, the Contractor shall perform the required design services in accordance with the following requirements.

## **DOCUMENTS**

Prepare necessary site-adapt design documents (which primarily consist of field investigations, calculations, design analysis, drawings and specifications) for construction. Design submittals should only address Contract requirements not shown on plans and specifications already furnished to the Contractor as part of this contract.

## **DESIGN PHASES**

Site-adapt design may require all or part of the following design phases:

rrrr. Site-Adapt Preliminary Design Review – 10%

ssss. Site-Adapt General Design Review – 65%.

tttt. Final Site-Adapt Design Review – 90%.

uuuu. Cleared for Construction Submittal – 100%.

## **STUDIES AND REPORTS TO INCLUDE:**

### **INVESTIGATIONS.**

All field and office work as required to accomplish specific studies shall be performed.

### **DRAWINGS AND SKETCHES.**

Drawings and sketches shall be prepared as required to present the details and results of the study.

### **REPORTS.**

Any task order that requires a report as a final product will have the required format described in that individual task order. Reports (in English) shall present the following:

## **DISCUSSION OF THE STUDY AND INVESTIGATION, INCLUDING APPLICABLE REFERENCES.**

vvvv. Description of all plans and schemes considered for obtaining the desired end result of the study.

www. All drawings and sketches required to present and illustrate the details and result of the study.

xxxx. Required estimates of construction costs, including comparative costs for indicated alternate plans and schemes.

yyyy. Results, conclusions, and recommendations.

#### **PREPARATION OF DESIGN MATERIAL (IN ENGLISH) TO INCLUDE:**

zzzz. Drawings, using AutoCAD or MicroStation.

aaaaa. Design analysis including basis for design.

bbbbb. Specifications.

ccccc. Other items as required.

#### **FURNISHED PLANS AND SPECIFICATIONS**

Plans and specifications furnished to the Contractor shall NOT be included as part of any site-adapt work or Design Submittal. The Contractor shall complete all work as shown in these furnished drawings and specifications without deviation, unless site conditions mandate changes (larger building foundations per geotechnical investigations, etc).

#### **CONSTRUCTION:**

dddd. Construction shall be completed in accordance with approved technical specifications and plans and shall be performed in compliance with all contract documents.

eeee. Safety during construction shall be the responsibility of the Contractor and shall be in accordance with the U.S. Army Corps of Engineers Safety and Health Requirements Manual EM 385-1-1.

#### **USACE, DA AND AFGHANISTAN REQUIREMENTS, CRITERIA, AND STANDARDS**

ffff. HQUSACE Engineer Manual EM 385-1-1, Safety and Health Requirements Manual.

ggggg. U.S. Army Engineer Transatlantic Programs Center, Corps of Engineers Instructions Manual for Use by Architect-Engineer and Transatlantic Programs Center, Volume 1 - Design Instructions (Sept 2000), and all supplements thereto, herein referred to as TAC Design Manual.

hhhhh. Corps of Engineers United Facilities Guide Specifications (UFGS), if required.

iiii. Corps of Engineers Resident Management System (RMS), if required.

jjjjj. HQUSACE Engineer Regulation ER 1-1-11, Network Analysis System.

kkkkk. DA Pamphlet 5-4-5, Value Engineering Handbook including VE Work Books (3986-R and 3987-R).

lllll. HQUSACE Engineer Regulation ER 1180-1-6, Construction Quality Management.

mmmmm. HQUSACE Engineer Pamphlet EP 415-1-260, Resident Engineer Management Guide.

nnnnn. Afghanistan Ministry of Public Works Standards for Roads

- ooooo. Standards other than those mentioned above may be accepted if the standards chosen are internationally recognized and meet the minimum requirements of the specified standards. The Contractor shall be prepared to submit proof of this if requested by the Contracting Officer.
- ppppp. Any conflict between standard manuals or criteria and specific instructions furnished or required by individual task orders shall be brought to the immediate attention of the Project Manager for resolution. As a general rule, the instructions and criteria contained in individual task orders shall govern and the most stringent technical criteria shall apply.
- qqqqq. Technical references are provided in Section 01015.

## **COORDINATION AND PROSECUTION OF WORK**

- rrrrr. During the prosecution of the work under each task order, the Contractor shall maintain a close liaison with the Government Contracting Officer and Project Manager who will be identified with each task order. A design coordinator may also be identified for technical coordination.
- sssss. All work shall be in accordance with the engineering instructions, directives, guides, specifications, drawings, technical manuals, and other instructions furnished.
- ttttt. The design and construction of each project shall be the most economical, based on analyses of alternatives, with necessary consideration being given to efficient use of all materials consistent with the design criteria.
- uuuuu. The use of critical and strategic materials not otherwise restricted shall be limited to the minimum required consistent with Corps of Engineers Conservation of Materials Policies and full consideration shall be given to the use of substitute materials as permitted by the Contracting Officer.
- vvvvv. Where not expressly specified, drawing scales shall be as approved by the Contracting Officer.
- wwwww. All roads and facilities to be designed and constructed under this contract shall be located vertically and horizontally to the vertical datum and to the horizontal coordinate system as specified.
- xxxxx. After submission of the site-adapt drawings and specifications, design analyses, quantity surveys, cost estimates, schedules, reports, and record drawings, as may be required under individual task orders, the Contractor shall make any corrections thereto as may be necessary due to errors or omission, including the preparation of addenda during the solicitation period, or changes during construction, that may be required as a result of such deficiencies.
- yyyyy. The Contractor shall advise the Contracting Officer of any discrepancies, ambiguities, and lack of clarity noted in drawings, and other data furnished for use in connection with any task order.
- zzzzz. The review periods established in the completion schedules set forth in task orders are the maximum anticipated periods required. Every effort will be made to accomplish reviews within shorter periods.
- aaaaa. All engineering manuals, guides, specifications, and other data furnished by the Government shall be returned, if requested, following completion of the total contract.

## **ORDERING INSTRUCTIONS AND PROCEDURES**

### **TASK ORDER SCOPE**

The foregoing descriptions of site-adapt design services, construction management services, and other miscellaneous services are presented for the purpose of providing general descriptions of the types of work that might be issued by separate task orders. The precise work to be performed will be as described in the task order scopes of work that are actually issued. Task orders shall not be completed with other firms. Task orders will include scopes of work with detailed descriptions of the types of services that are to be provided. Task orders will initially constitute requests for proposal (RFP's) with specified times for submission of the Contractor's proposals. Upon receipt of a task order RFP the Contractor shall prepare and submit pricing and any required non-pricing information. The Government will review those submissions and schedule a mutually agreeable time for negotiations. It is the intent of the Government to enter into fixed-price agreements prior to work beginning. Task Orders shall be awarded to the lowest priced offerer.

### **TASK ORDERS PRICE PROPOSAL**

The scope of work accompanying a task order will be as detailed as circumstances and the situation allow. Task orders will request a complete and detailed price proposal from the Contractor. The price proposal submitted by the Contractor will, as a minimum, address to the extent practicable the following items:

- bbbbb. A comprehensive technical and management approach for accomplishment of the task order work along with a draft detailed description prepared by the Contractor firm concerning its recommendation on how best to proceed with that work. The Contractor's detailed description of how to proceed may be incorporated in whole or in part into the final task order scope of work.
- cccccc. Detailed cost or pricing information in accordance with the instruction set forth in the task order and the provisions of FAR 15.403-4,5.
- ddddd. A proposed schedule for completing the task order work, if appropriate.
- eeeee. Any other requested and/or pertinent information.
- fffff. The Contractor's proposed price shall include the cost of all site-adapt engineering, construction, special studies, and consultant services and laboratory work required to accomplish the work under the task orders, except as may be otherwise specifically provided in the task orders.

### **TASK ORDER AWARD**

The Contracting Officer intends to award task orders without prior discussions in most circumstances as an individual contract with a defined scope of work, completion date and will contain any special terms and conditions to perform the identified work.

### **CONTRACT CONTROL PROCEDURES:**

ggggg. The contract shall be for a one-year period (with options)

hhhhh. Contractor is not obligated to honor task order less than \$25,000.00 or greater than \$5,000,000.00

iiiiii. Awarded contracts will share a programmatic capacity of \$45,000,000.



**--END OF SECTION 01010--**

**SECTION 01015 TECH SECUR UPGRA**

**TECHNICAL REQUIREMENTS**

**O&M SECURITY UPGRADES MATOC**

**GENERAL**

**SITE-ADAPT DESIGN**

The Contractor shall complete all work as shown in the furnished drawings and specifications without deviation, unless site conditions mandate deviations. Where site conditions mandate deviations from, or additions to, the furnished drawings and specifications, the Contractor shall design and prepare drawings, sketches and specifications necessary to "site-adapt" the contracted work. Site-adapt work shall achieve the initial intent of the drawings and specifications provided. Unless otherwise specifically noted in task order, site-adapt design efforts shall be limited to work which must deviate from or supplement the drawings and specifications initially provided. Site-adapt work is to be considered incidental and necessary and shall be considered to be part of the overall scope of contracted services to be performed by the Contractor in order to deliver a complete product. All references to design in this and other sections of this contract refer to site-adapt efforts.

**COMPLIANCE**

The Contractor's design and construction must comply with technical requirements contained herein. The designer shall have a minimum of 5 years experience with the design and construction of the same magnitude and complexity as required in this project. The Contractor shall provide design and construction using the best blend of cost, construction efficiency, system durability, ease of maintenance and environmental compatibility.

**MINIMUM & ALTERNATE REQUIREMENTS**

The design and product requirements stated in these documents are minimum requirements. Exceeding the minimum requirements as improvements to the design stated herein is highly encouraged at no additional cost and as approved by the government. The technical requirements listed in Codes and Technical Criteria below apply to this project. Any deviation from the technical requirements shall be approved by the Contracting Officer. Request for deviations shall be submitted for approval. The Contractor is encouraged to propose alternate design or products (equipment and material) that are more commonly used in the region; but these variations shall be equal in performance from a technical standpoint as well as more cost effective or allow for more timely completion. Variations shall furnish the same system safety, durability, ease of maintenance and environmental compatibility. The Contractor will be required to submit information as specified in Section 01335, Variations, for all proposed variations with which to make a comprehensive comparison of the proposed alternate. All variations of approved designs must be approved by the Contracting Officer.

## **ASBESTOS CONTAINING MATERIALS**

Asbestos containing material (ACM) shall not be used in the design and construction of this project. If no other material is available which will perform the required function or where the use of other material would be cost prohibitive, a waiver for the use of asbestos containing materials must be obtained from the Contracting Officer.

## **SAFETY**

### **UNEXPLODED ORDNANCE (UXO)**

### **UNEXPLODED ORDNANCE (UXO)**

### **UXO/MINE DISCOVERY DURING PROJECT CONSTRUCTION**

It is the responsibility of the Contractor to be aware of the risk of encountering UXO/Mines and to take all actions necessary to assure a safe work area to perform the requirements of this contract. If during construction, the contractor becomes aware of or encounters UXO/Mine or potential UXO/Mine, the contractor shall immediately stop work at the site of encounter, clearly mark the area of UXO/Mine, move to a safe location, notify the COR, and mitigate any delays to scheduled or unscheduled contract work. Once the contractor has informed the COR, the contractor will await further direction. The Contractor assumes the risk of any and all personal injury, property damage or other liability arising out of or resulting from any Contractor action taken hereunder.

Note: The Contractor and its subcontractors may not handle, work with, move, transport, render safe, or disarm any UXO/mine, unless they have appropriate accreditations from the UNMACA.

## **EXPLOSIVES SAFETY**

### **GENERAL SAFETY CONSIDERATIONS**

General safety considerations applicable to personnel, both essential and non-essential, at project sites where UXO may be encountered include:

- a. Do not carry fire or spark-producing devices.
- b. Do not conduct explosive or explosive-related operations without approved procedures and proper supervision and UXO safety support.
- c. Do not become careless by reason of familiarity with UXO or the reported probability level of UXO contamination.
- d. Do not conduct explosive or potentially explosive operations during inclement weather.
- e. Avoid contact with UXO except during UXO clearance operations.
- f. Conduct UXO-related operations during daylight hours only.
- g. Employ the "buddy system" at all times.

### **ACTIVITY HAZARD ANALYSIS (AHA) BRIEFINGS**

- a. Activity Hazard Analysis's shall be prepared in accordance with the Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1.
- b. Hazard analyses will be prepared and briefed by personnel that are knowledgeable in UXO and explosives safety standards and requirements. These personnel should understand the specific operational requirement and hazard analysis methodologies. A hazard analysis will be performed for each activity to determine the significance of any potential explosive-related hazards. Explosive residues may be discovered or exposed during UXO operations in the form of powder or various granular and powder based pellets. These contaminants can enter the body through the skin or by ingestion if proper personal hygiene practices are not followed. Explosive fillers such as white

phosphorus are dangerously reactive in air and acute exposure can result in serious injury to the skin, eyes, and mucous membranes. They are also a fire hazard.

Safety requirements (or alternatives) that will either eliminate the identified hazards, mitigate or control them to reduce the associated risks to an acceptable level will be developed. The adequacy of the operational and support procedures that will be implemented to eliminate, control, or abate identified hazards or risks will then be evaluated and a second risk assessment completed to verify that a satisfactory safety level has been achieved.

## **NOTIFICATION OF NONCOMPLIANCE**

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall make no part of the time lost due to such stop orders the subject of claim for extension of time or for excess costs or damages.

## **LIMITATION OF WORKING SPACE**

The Contractor shall, except where required for service connections or other special reason(s) confine his operations strictly within the boundaries of the site. Workmen will not be permitted to trespass on adjoining property. Any operations or use of space outside the boundaries of the site shall be by arrangement with all interested parties. It must be emphasized that the Contractor must take all practical steps to prevent his workmen from entering adjoining property and in the event of trespass occurring the Contractor will be held entirely responsible.

Areas located immediately outside the construction area are known to contain mines and unexploded ordnance (UXO). Contractors assume all risks when venturing in or out of the designated work area.

## **TEMPORARY STRUCTURES**

The Contractor shall erect suitable temporary fences, lighting, and necessary structures to safeguard the site, materials and plant against damage or theft and for the protection of the general public and shall adequately maintain the same throughout the course of the contract.

## **SUBCONTRACTORS**

Compliance with the provisions of this section by subcontractors will be the responsibility of the contractor.

## **LIST OF CODES AND TECHNICAL CRITERIA**

The following codes and technical criteria and those referenced therein shall be required for this project. References within each reference below shall be required and adhered to. If there is conflict in the criteria the most stringent requirement shall be applied. This list is not exhaustive and is not necessarily complete. The publications to be taken into consideration shall be those of the most recent editions.

ACI 301M Specifications for Structural Concrete (latest edition), American Concrete Institute

ACI 318 Building Code Requirements for Structural Concrete (latest edition), American Concrete Institute

ACI 530/ASCE 5/TMS 402, Building Code Requirements for Masonry Structures (latest edition)

Air Force Manual 32-1071, Security Engineering, volumes 1-4, 1 May 1994

American Institute of Steel Construction (AISC), Specifications for Structural Steel Buildings (latest edition)

American Institute of Steel Construction (AISC), Seismic Design Manual (latest edition)

American Water Works Association, ANSI/AWWA C651-99 standard

ASCE 7, Minimum Design Loads for Buildings and Other Structures (latest edition)

ASTM-D-5299 Standard Guide for Decommissioning Ground Water Wells

AWS D1.1, Structural Welding Code – Steel (latest edition), American Welding Society

DCID 6/9 Physical Security Standards for Sensitive Compartmented Information Facilities

DCID 1/21, Manual for Physical Security Standards For Sensitive Compartmented Information Facilities (SCIF)

EIA ANSI/TIA/EIA-607: (1994) Commercial Building Grounding/Bonding Requirement Standard

Factory Mutual (FM) Approval Guide-Fire Protection (2002)

IBC - International Building Codes, 2006 edition (and its referenced codes including those inset below)

IEEE C2, National Electrical Safety Code (NESC), latest edition

IMC – International Mechanical Code, latest edition

IPC – International Plumbing Code, latest edition

Lighting Handbook, IESNA, latest edition

NFPA 30, Flammable and Combustible Liquids Code, latest edition

NFPA 30A, Code for Motor Fuel Dispensing Facilities and Repair Garages, latest edition

NFPA 70, National Electrical Code, 2005 edition

NFPA 72, National Fire Alarm Code, 2002 edition

UFC 3-220-03fa Soils and Geology

UFC 3-230-03a, Water Supply, 16 Jan 2004

UFC 3-230-04a, Water Distribution, 16 Jan 2004

UFC 3-230-06a, Subsurface Drainage, 16 Jan 2004

UFC 3-230-07a, Water Supply: Sources and General Considerations, 16 Jan 2004

UFC 3-230-08a, Water Supply: Water Treatment, 16 Jan 2004

UFC 3-230-09a, Water Supply: Water Storage, 16 Jan 2004

UFC 3-230-10a, Water Supply: Water Distribution, 16 Jan 2004

UFC 3-230-13a, Water Supply: Pumping Stations, 16 Jan 2004

UFC 3-230-17FA, Drainage in Areas Other than Airfields, 16 Jan 2004

UFC 3-240-03N, Operation and Maintenance: Wastewater Treatment System Augmenting Handbook, 16 Jan 2004

UFC 3-240-04a, Wastewater Collection, 16 Jan 2004

UFC 3-240-09fa Domestic Wastewater Treatment 16 Jan 2004

UFC 3-240-07fa Gravity Sewers 16 Jan 2004

UFC 3-240-04A Wastewater Collection 16 Jan 2004

UFC 3-520-01, Interior Electrical Systems, 10 June 2002

UFC 3-530-01AN, Design: Interior and Exterior Lighting and Controls, 19 Aug 2005

UFC 3-535-01, Visual Air Navigation Facilities, 17 November 2005

UFC 3-540-04N Design: Diesel Electric Generating Plants, 16 Jan 2004

UFC 3-550-03FA Design: Electrical Power Supply and Distribution Systems, 1 Mar 2005

UFC 3-600-01, Design: Fire Protection Engineering for Facilities, 26 Sept 2006

UFC 4-010-01, Design: Minimum DoD Antiterrorism Standards for Buildings, 22 Jan 2007

UFC 4-020-03, Security Engineering: Fences, Gates, and Guard Facilities, 14 June 2007

UFC 4-020-04FA, Electronic Security Systems: Security Engineering, 1 Mar 2005

UFC 4-021-01, Design and O&M: Mass Notification Systems, draft 1 May 2006

UFC 4-022-01, Security Engineering: Entry Control Facilities/Access Control Points, 25 May 2005

Unified Facility Criteria (UFC) is available online at [http://www.wbdg.org/ccb/browse\\_cat.php?o=29&c=4](http://www.wbdg.org/ccb/browse_cat.php?o=29&c=4)

In addition, technical criteria provided in USACE-AED Design Requirements (most recent version) shall be required for use in design and construction specifications as indicated in the following documents. The following design criteria shall be used:

AED Design Requirements - Site Layout Guidance, latest version

AED Design Requirements - Well Pumps & Well Design/Specifications, latest version

AED Design Requirements – Water Tank and Water Distribution Systems, latest version

AED Design Requirements - Booster Pumps, latest version AED Design Requirements – Chlorinators, latest version

AED Design Requirements - Hydro-Pneumatic Tanks, latest version

AED Design Requirements - Jockey Pumps, latest version AED Design Requirements - Water Tanks, latest version

AED Design Requirements – Hydrology, latest version

AED Design Requirements - Culvert and Causeway Design, latest version

AED Design Requirements - Sanitary Sewer and Septic Systems, latest version AED Design Requirements - Grease Trap, latest version

AED Design Requirements - Oil-Water Separator, latest version

AED Design Requirements - Package Wastewater Treatment Plants and Lagoons, latest version

AED Design Requirements - Vertical Curves, latest version

AED Design Requirements – Horizontal Curves & Super Elevation, latest version

AED Design Requirements – Geotechnical Investigations for USACE Projects, latest version

Standards other than those mentioned above may be accepted if the standards chosen are internationally recognized and meet the minimum requirements of the specified standards. The Contractor shall be prepared to submit proof of this if requested by the Contracting Officer.

## **AED DESIGN REQUIREMENTS DOCUMENTS**

AED Design Requirements documents listed above shall be adhered to in this contract. These documents are available from the COR. These documents shall be used as the basis for design and construction, and for selecting options within the United Facilities Guide Specifications (UFGS). It is the contractor's option to use specifications contained in the AED Design Requirements Documents, when provided, or to adapt the UFGS specifications to match the requirements provided in the AED Design Documents and specifications. Site or project specific data and requirements in the AED Design Requirements documents shall supersede UFGS language where there are differing conditions which must be evaluated and selected for use.

## **SITE DEVELOPMENT**

### **GENERAL**

The project includes furnishing all materials, equipment and labor for constructing electrical, water, communication, sanitary sewer and storm sewer service lines, as applicable, and connecting to the existing utility networks.

### **ENVIRONMENTAL PROTECTION**

#### **APPLICABLE REGULATIONS**

The Contractor shall comply with all Host Nation laws, rules, regulations or standards concerning environmental pollution control and abatement with regard to discharge of liquid waste into natural streams or manmade channels. The contractor shall review host nation and U.S. Government environmental regulations with the contracting officer prior to design and discharge of any liquid wastes into natural streams or manmade channels.

#### **NOTIFICATION**

The Contracting Officer will notify the Contractor in writing of any observed non-compliance with the foregoing provisions. The Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No extension of time or damages will be awarded to the Contractor unless it was later determined that the Contractor was in compliance.

#### **SPILLAGES**

Measures shall be taken to prevent chemicals, fuels, oils, greases, bituminous materials, waste washings, herbicides and insecticides, and construction materials from polluting the construction site and surrounding area.

#### **DISPOSAL**

Disposal of any materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., shall be taken to a dumpsite off site and subject to the approval of the Contracting Officer. Burning at the project site for the disposal of refuse and debris will not be permitted.

### **CIVIL SITE DEVELOPMENT**

#### **SITE PLAN**

As an optional item, the contractor shall prepare plat or plan of the existing property as part of the construction package which consists of a Boundary Survey of the site. The site address is provided in the Task Order. The survey shall show the closure of the property boundary consisting of identifying all property corners, establishing horizontal and vertical control listing all bearing and distances of property lines from the centerline of all adjacent roads. The contractor shall place property corner markers and a monument on the property showing site elevations, coordinate grid systems and WGS 84 latitude longitude. This survey shall meet the requirements of World Geodetic System 1984 (WGS 84 UTM Zone 41N, 42N, or 43N) in decimal degrees. The survey design shall include topographic map and the locations of all building corners, structures, major trees, road right of ways, names of roads, widths of roads, easements, right of ways, setbacks, parking and paving areas, storage containers, stoops, sidewalks and walkways, above ground utilities, electrical and bunker locations. The contractor shall identify and show existing perimeter walls, fences, barriers, guard towers and entry control point structures. The contractor shall locate the facilities in general agreement with the drawings included and any requirements in the Scope of Work 01010. All site features shall be clearly defined and dimensioned on the site plan. All site plans and master plans shall be drawn in the following projection and datum for incorporation into the U.S. Army Corps of Engineers GIS system IAW the World Geodetic System 1984 (WGS 84 UTM Zone 41N, 42N, or 43N).

## **DEMOLITION**

Demolition shown on the drawings shall include removal of all structures, foundations, pavements, and utilities, and clear and grubbing. All refuse and debris shall be disposed of off of the site. Holes and depressions shall be backfilled. Fill materials shall be composed of satisfactory soils or aggregates defined in ASTM D 2487 as GW, GP, GM, SP, SM, and SW. Minimum soil compaction shall be 95 percent of maximum density as defined in ASTM D 1557.

Scrap metal shall be the property of the Host Government. The scrap metal on site shall be moved to an area away from the site perimeter as directed by the Contracting Officer's Representative and left for the Host Government to remove and/or salvage. Demolished fencing and concertina wire shall be neatly rolled up for reuse by the host government. Likewise, used fence posts and outriggers shall be neatly stockpiled for reuse by the host government.

## **SITE GRADING & DRAINAGE**

The contractor will provide all necessary site grading to insure adequate drainage so that no areas will be flooded due to a rainfall of a 10-year frequency. Drainage of the area should be compatible with the existing terrain. Building floor elevation shall be a minimum 150mm above grade and slope away from the building on all sides at a minimum of 5% for 3 meters. Protection of facilities from flood waters originating offsite of an installation shall be based on a rainfall for a 25-year frequency event.

Rainfall data shall be based on data obtained from meteorological records collected in Afghanistan. National agencies may be consulted for data. In the absence of site specific data, intensity-duration-frequency curves contained in the AED Design Requirements – Hydrology latest version, shall be used by extrapolating the rainfall intensity information from the stations in closest proximity to the project. Under no circumstances will relationships developed by extrapolation from foreign countries be used for hydrologic studies.

## **ROADS**

### **AGGREGATE ROADS**

Aggregate roads are required where indicated on the drawings. All roads shall be of wearing surface 7.3 meters (24 feet) wide, unless otherwise noted, graded for proper drainage, provided with necessary drainage structures and completed with prescribed surfaces in accordance with the specifications and applicable sections of TM 5-822-2 and TM 5-822-5 standards. Aggregate pavement surface shall be constructed per the drawings. If no requirements are shown, COR shall designate surface. Pavement surface shall consist of 150mm (6 inches) thick aggregate surface course material compacted to 95% maximum proctor density placed above 150mm (6 inches) of base course material compacted to 95% maximum proctor density. The top 150mm (6 inches) of the subgrade shall be scarified and compacted to 95% maximum density. Provide 1.0 meter wide shoulder on both sides of roadways, consisting of a surface of aggregate base course material and it should be 150mm thick @ 2.0% slope. Storm drainage shall be provided along both sides of the road. Contractor shall notify the Contracting Officer immediately if initial site survey determines that the area hydrology requires major drainage structures or bridges. Also, the Contracting Officer shall be immediately notified if the required lengths of road or preexisting conditions are determined to be substantially or materially different than the above-described conditions/estimates.

### **PAVED ROADS**

Paved roads are required where indicated on the drawings. All roads shall be of wearing surface 7.3 meters (24 feet) wide, unless otherwise noted, graded for proper drainage, provided with necessary drainage structures and completed with prescribed surfaces in accordance with the specifications and applicable sections of TM 5-822-2 and TM 5-822-5 standards. Paved surface shall be constructed per the drawings. If no requirements are shown, COR shall designate surface. The roads shall be crowned and graded with a 2% cross slope. Paved roads sections shall have 150 mm (6 inch) base course minimum compacted at 98% maximum proctor density, placed over 250mm (10 inches) of subbase which shall be surfaced with a minimum 100 mm (4 inch) hot mix asphalt concrete compacted at 100%, unless otherwise noted. The top 150mm (6 inches) of the subgrade shall be scarified and compacted to 95% maximum density. Provide 1.0 meter wide shoulder on both sides of roadways, consisting of a surface of aggregate base course material and it should be 150mm thick @ 2.0% slope. Storm drainage shall be provided along both

sides of the road. Contractor shall notify the Contracting Officer immediately if initial site survey determines that area hydrology requires major drainage structures or bridges. Also, the Contracting Officer shall be immediately notified if the required lengths of road or preexisting conditions are determined to be substantially or materially different than the above-described conditions/estimates.

### **TURNING RADIUS**

All roads curves shall be provided with the turning radii indicated on the drawings. If no information is provided, all areas where tractor-trailer vehicles will travel shall be designed for the worst case turning radius or at a minimum centerline turning radius of 12.2 meters (40 feet). If no requirements are shown, COR shall designate the design radius to be used. Contractor shall provide turning radius to match existing road Design and construction of roads and pavements shall be based on recommendations from geotechnical investigation required herein.

### **BRIDGES AND SITE GRADING PLAN**

Bridges and major drainage structures shall be provided per the drawings. The Contractor shall notify the Contracting Officer immediately if initial site survey determines that area hydrology requires major drainage structures or bridges. The contractor shall design a site grading plan that provides positive drainage and minimizes the requirement for major structures in a cost effective manner.

### **PARKING AREAS AND MOTOR POOLS**

Contractor shall construct parking and storage areas where indicated on the drawings utilizing the construction and the surfaces shown. Parking and storage areas shall be graded for proper drainage, provided with necessary drainage structures and completed with prescribed surfaces in accordance with the specifications and applicable sections of TM 5-822-2 and TM 5-822-5 standards. If no requirements are provided, COR shall designate surface. Aggregate pavement surface should consist of 150mm (6 inches) thick aggregate base course (ABC) material compacted to 95% maximum proctor density, placed above 150mm of scarified subgrade compacted to 95% maximum density. Provide 1.0 meter wide shoulder around all parking areas and motor pools, consisting of a surface of aggregate base course material and it should be 150mm thick @ 2.0% slope. Aggregate base course material must be well graded, durable, uniformly moistened, and mechanically stabilized by compaction. Degree of compaction shall be expressed as a percentage of the maximum density obtained by the test procedure in ASTM D 1557. Unless otherwise directed, the contractor shall provide a minimum turning radius of 12.2 meters (40 feet).

### **FORCE PROTECTION FACILITIES**

The Contractor shall construct force protection facilities per the drawings. The Force Protection design shall incorporate minimum setbacks for new facilities to maximum extent possible as permitted by size of the site and the requirements of the user

### **PERIMETER SECURITY WALL**

Perimeter security walls shall be constructed per the drawings. If no information is provided contractor shall construct 600mm thick walls where shown. The height of the walls shall be as shown measured from the inside grade. Inside grade shall in all cases be higher than outside grade. The foundation width shall be based on information in the drawings or provided by the COR. The wall shall be capped with a cast-in-place concrete capping. Outriggers to support barbed wires and a single-coil concertina style razor wire shall be provided and installed by the contractor. Site grading outside the wall, must slope away from the walls for at least a distance of 5 meters. Grade outside the wall shall insure that grade is at least 2.4 meters below the top of the wall for a distance of 10 meters from the outside surface of the wall. The wall shall be designed to prevent visual access to the inside of compound by all pedestrian and vehicular traffic outside the compound which may require the wall to be built at a higher level in some locations. Penetrations through the Perimeter Security Wall shall only be for site drainage purposes and shall have force protection such as a welded bar grill, welded grating, or other pre-engineered barrier.

### **PERIMETER WALL ACCESS GATES**

Gates shall be as shown on the drawings and per the specifications. If no information is provided the COR shall designate the style of gates to be constructed.



## **SWINGING GATES**

Swing gates shall be K4 swing type and shall be certified to stop a 6,800 KG (15,000 lb) vehicle traveling at 48kph (30mph). The gate shall be able stop the vehicle and cargo, although an allowable gate deflection of 3ft will be permitted. Swing type gates shall be constructed of steel and consist of a pair of 3.65 m wide x 2.4 m high steel leaves, constructed of 6mm steel plate skins, steel tube frame, and steel tube intermediate posts and rails. Gate design shall insure it is dimensionally stable, square, true and planar. Gate leaves shall not rack, shake or deflect during operation. Hinges shall be designed and constructed to support the entire weight of each leaf. Gates shall have a sufficient number of hinges which shall be anchor mounted to the exterior walls, to support each gate leaf. Provide a locking mechanism that holds the gates together when in the closed position as well as a drop bolt that engages a steel sleeve embedded in the pavement. The swing gate will also have a built- in personnel gate with its own locking mechanism. The gate will have 6 strands of tensioned barbed wire installed on top. The gates will be painted two (2) coats of a good quality metal primer and two (2) coats of a good quality finish coating. The color will be a Light Tan; final selection will be made by the COR from samples provided by the contractor.

## **SLIDING GATES**

Sliding gates shall be K4 sliding type and shall be certified to stop a 6,800 KG (15,000 lb) vehicle traveling at 48kph (30 mph). The gate shall be able stop the vehicle and cargo, although an allowable gate deflection of 3ft will be permitted. Gate shall be a minimum 3 M tall, with 0.5 M of high tension razor wire mounted on top. Gate shall be constructed of 100 mm x 100 mm x 5 mm square steel tubing, faced with 5mm steel plate. The design and construction of the gates shall insure that it is dimensionally stable, square, true and planar. Sliding Gate shall not rack or deflect when open, closed, or in motion. Gate tracks shall be anchor mounted to galvanized steel stanchions. The gate tracks will be an upside down "V" and the gate wheels will be heavy duty steel wheels with a "V" cut out of them to prevent snow and other debris making the gate inoperable. Provide a locking mechanism that holds the gate closed as well as a drop bolt that engages a steel sleeve embedded in the pavement. The gate will have 6 strands of tensioned barbed wire installed on top. The swing gate will also have a built- in personnel gate with its own locking mechanism. The gates will be painted two (2) coats of a good quality metal primer and two (2) coats of a good quality finish coating. The color will be a Light Tan; final selection will be made by the COR from samples provided by the contractor.

## **OUTRIGGERS**

Provide outriggers as shown on the drawings. Outrigger supporting arms shall be "Y" shaped with post securely embedded into the top of the wall. Posts shall conform to ASTM F 1083, Pipe, Steel, and Hot Dipped Zinc Coated (Galvanized) Welded.

## **REINFORCED BARBED TAPE**

Provide reinforced barbed wire provided as shown on the drawings. Reinforced barbed tape shall be 600 mm diameter concertina style coil consisting of 31 loops. Each loop shall consist of 19 barb clusters per loop. Adjacent coils loops shall be alternately clipped together at three points about the circumference to produce the concertina effect upon deployment. Spacing between attachments points when deployed shall be 400 mm. The reinforced barbed tape shall be fabricated from 430 series stainless steel with hardness range of Rockwell (30N) 37-45 conforming to the requirements of ASTM A 176. Each barb shall be a minimum of 30.5 mm (1.2 inch) in length, in groups of 4, spaced on 102 mm (4 inch) centers. The stainless steel core wire shall have a 2.5 mm (0.098 inch) diameter with a minimum tensile strength of 895 MPa. Sixteen gauge stainless steel twistable wire ties shall be used for attaching the barbed tape to the barbed wire. The reinforced barbed tape shall be equivalent to NSN: 5660-01-457-9852.

## **CHAIN-LINK FENCE AND GATES**

### **SWING**

Provide chain-link fence and gates as shown on the drawings. Fence and gate fabric shall be No. 9 gage wires woven into a 50 mm diamond mesh. Fabric shall be coated with 366 grams per square meter zinc galvanizing. Posts shall be 3" diameter, ASTM F 1083 Pipe, Steel, Hot Dipped Zinc Coated (Galvanized) Welded or equal. Top

of fence and gates shall be provided with outriggers and reinforced barbed tape as indicated above. Post sizes shall be as shown on drawings.

The gates shall be swing or sliding type. Hinged gates shall be a pair of 3.65 m wide x 2.4 m high leafs, constructed of a steel tube frame and steel tube intermediate posts and rails. The design of the gates shall insure that it is dimensionally stable, square, true and planar. Gate leafs shall not rack or deflect when install on its hinges. Gates shall have a sufficient number of hinges which shall be anchor mounted to the exterior masonry walls, to support each gate leaf. Provide a locking mechanism that holds the gates together when in the closed position as well as a drop bolt that engages a steel sleeve embedded in the pavement.

### **SLIDING**

Provide chain-link fence and gates as shown on the drawings. Fence and gate fabric shall be No. 9 gage wires woven into a 50 mm diamond mesh. Fabric shall be coated with 366 grams per square meter zinc galvanizing. Gate construction members shall be ASTM F 1083 Pipe, Steel, Hot Dipped Zinc Coated (Galvanized) Welded or equal. Top of fence and gates shall be provided with outriggers and reinforced barbed tape as indicated above. Post sizes shall be as shown on drawings.

The gates shall be sliding type. Gate shall be 7.5 meters wide and shall have rollers at 2 meter intervals and roll in a pavement mounted recessed track to prevent malfunction. Gate shall be constructed of a steel tube frame and steel tube intermediate posts and rails. The design of the gates shall insure that it is dimensionally stable, square, true and planar. Gate shall not rack or deflect when spanning the road. Gate shall have a sufficient number of rollers for support and smooth opening and closing. Gate shall have a locking mechanism that holds the gate closed when in the closed position.

### **SNIPER SCREEN**

Provide sniper screen as shown on the drawings. Screen material shall be ultraviolet light resistant and guaranteed against sunlight degradation for five years. Material will allow wind to blow through, without stretching the material, or distorting the frame. Sniper screen material will be fastened to standard galvanized fencing (see above) mounted to a rigid frame. The frame shall be securely embedded into the top of the wall. Frame components shall conform to ASTM F 1083, Steel Pipe, and Hot Dipped Zinc Coated Galvanized Welded.

### **ENTRY CONTROL POINT (ECP), PRIMARY & SECONDARY**

Provide primary and secondary ECP with the dimensions and features shown on the drawings. Contractor shall construct facilities to secure entrance of authorized vehicles into the compound. A Gate House shall be provided inside the compound as part of the Primary ECP. Entrance to the Primary ECP shall be paved, and shall have a single-leaf manually operated sliding steel gate or a two-leaf steel swinging gate. The gate shall be considered the Active Vehicular Barrier (AVB). A drop arm and guard shack shall be provided and located at a distance of one and a half vehicles away from the entrance to serve as a checkpoint. Jersey Barriers or other approved alternatives shall be used to design and construct a Passive Vehicular Barrier (PVB) beyond and away from the checkpoint to significantly slow down approaching vehicles. The PVB shall be laid out to force approaching vehicles into a snake-like manoeuvre while approaching the checkpoint and to significantly slow them down. See Appendix A for Gate House and Guard Shack drawings. Provide a rejection lane after vehicle inspection and before entrance to the compound.

### **ACTIVE VEHICLE BARRIERS**

#### **MANUAL VEHICLE BARRIER CRASH BEAM (4.0 M)**

Provide as shown on the drawings. The crash beam shall be an above grade assembly that in the down position presents an obstacle to approaching vehicles. The height of the barrier should be a minimum of 30 inches as measured from the roadway surface to the centerline of the crash beam. The crash beam must be capable of blocking a minimum road width of 4 meters. The crash beam is manually raised and lowered with the aid of a counterbalanced end requiring approximately 60 pounds of force. The end of the crash beam should include a locking pin with padlock for securing the beam when it is in the down position. The beam shall be able to withstand a Department of State K4 impact rating (15,000 vehicle @ 30 mph or a force of 450,000 ft-lb). The beam shall be

able stop the vehicle and cargo, vehicle allowing a deflection of 0.9m (3 feet).

### **DROP ARM GATES**

Provide as shown on the drawings. The drop arm gate shall be an above grade assembly that in the down position presents an obstacle to approaching vehicles. The height of the beam shall be a minimum of 30 inches above finished grade. The crash beam must be capable of blocking a minimum road width of 4.0 meters. The crash beam shall be manually raised and lowered with less than 30 pounds of force. The end of the crash beam should include a locking pin with padlock acceptance for securing the beam when it is in the down position capable of stopping a 6,800 KG (15,000 lb) vehicle allowing a deflection of 0.9m (3 feet).

### **TIRE SHREDDER**

Provide as shown on the drawings. Tire shredders shall be surface mounted or imbedded. Both styles shall have manual latch down capability. Shredders shall extend the entire width of the roadway opening where installed. At a minimum provide one shredder in each approach lane. These devices are normally used for traffic control purposes and are designed to slow or stop a vehicle by deflating their pneumatic tires. When a vehicle drives over the mechanism in the wrong direction, the spikes penetrate the tire casing, which quickly deflates the tires, making the vehicle difficult to operate for extended periods. Tire shredders are not recommended where vehicle traffic drives over these devices at speeds exceeding 5 mph. These systems may also not be effective against modern "run flat" tires, heavy-duty truck tires, or extra-wide tires that can bridge over two or more spikes. Tire shredders have a very limited capability to stop a vehicle.

### **CABLE LIFT BARRIER**

Provide as shown on the drawings. A Cable Lift Gate shall be provided in addition to the sliding gate. Cable lift gate will normally be in the raised (deployed) position. Cable lift gate shall be certified to stop a 6,800 KG truck travelling 80 KPH. Shall be able to balance by counterweights so it can be manually raise or lowered by one man in seconds. Deployed height will be at least 1 M. Cables shall be a minimum of 25mm diameter braided steel.

### **POWERED VEHICLE BARRIER (POP UP BARRIER)**

Provide as shown on the drawings. System shall be a plate type, retractable bollard, or crash beam barrier system. The barrier motion shall be instantly reversible and capable of raising the barrier from the lowered position to the raised position within 8 seconds during normal use and within 2 seconds during an emergency. The barrier will be capable of being closed in not more than 3 seconds. Barrier shall deploy and be certified to stop a 6,800 KG truck travelling 80 KPH.

### **PASSIVE BARRIERS**

#### **CONCRETE**

Provide number, type and sizes shown on the drawings. Barriers shall be reinforced concrete and shall be sized per the drawings and constructed IAW force protection standard specifications. Barriers shall be interlocking to provide additional resistance and to block visual line of sight into their rear. Standard barriers shall be Alaska, Texas, Jersey, etc.

#### **HESCO BARRIERS**

Provide number and sizes shown on the drawings. Hesco barriers shall be made of geo-textile fabric shall be 2mm (0.08") non-woven polypropylene and bound with 8 gauge galvanized steel wire mesh size 7.62 cm (3") grid. The coil hinges and joining pins shall be 8 gauge hardened steel. Fill material shall be a mixture of sand and gravel. The gravel shall not be more than 1.8 cm (¾") in size. The materials shall be compacted in lifts no greater than 25 cm (10").

Bastions shall be provided with suitable foundations as recommended by the manufacturer depending on the height, and filled with a sand & gravel mixture. Provide a gravel base at least 50 cm (20") deep, and extending around the

bottom edge of the barrier by at least 50 cm (20"), for proper support and drainage. The gravel base material shall have no stones large than 2.5 cm (1"), due to the risk of becoming projectiles in a blast.

Protection from UV light shall be provided with an application of a protective coating such as UV CAM, cement slurry not greater than 0.3 cm (1/8") thick. The cement slurry is a mixture of cement powder and water, mixed to a proportion of 1:1, but this may be adjusted to suit the application method. Sand may also be added as necessary. Welded mesh and wire shall conform to ASTM A641 Class 3. Geo-textile shall be ASTM D4632, D6241, D4355, D4751 & D4491.

#### **ENTRY CONTROL POINT (ECP) STAND OFF**

Provide as shown on the drawings. Additional ECP shall be provided at a distance of no less than 30 meters from the Primary ECP. The Stand-Off ECP shall include a drop arm steel gate and guard shack and other features shown.

#### **GUARD SHACK**

Provide as shown on the drawings. Construct a guard shack, located outside the compound at the stand-off primary and secondary ECP locations, where the drop metal swing arm will be built. The contractor shall construct guard shacks at the locations indicated on the drawings. Guard shacks shall be 11 SM buildings consisting of reinforced concrete frames, foundations, floor slabs, and roof slabs, with reinforced CMU exterior walls or reinforced concrete exterior walls 200mm thick. Floor finish shall be sealed concrete. Each building shall have three (3) horizontal sliding windows, one (1) exterior door, and a metal sloping roof. Glazing for the windows shall be minimum 8mm thick Plexiglas. Contractor will insure that all seismic requirements are met in the design and construction of the facility.

#### **GUARD HOUSE**

Provide as shown on the drawings. Construct a guard house, located outside the compound walls, next to the primary ECP, where the gate will be located, as indicated on the drawings. The gate house shall have dimensions shown or shall be a 14.7 SM building consisting of a reinforced concrete foundation and floor slab, reinforced CMU exterior or reinforced concrete exterior walls, and a concrete roof. The exterior wall finish shall be stucco and the interior finish shall be plaster. The finished ceiling shall be either gypsum wallboard or plaster. Provide mineral fiber insulation in the ceiling space. The interior of the building shall have one 8.3 SM private office, an 11 SM break room, a 2 SM storage room, and a 2.5 SM toilet room. The building shall have 4 horizontal sliding windows, one located in each wall. Provide 2 exterior metal doors. Contractor will insure that all seismic requirements are met in the design and construction of the facility.

#### **GUARD TOWERS**

Provide as shown on the drawings. The following criterion applies to the guard tower construction: Guard tower shall be a minimum of 3 m x 3 m in size. The guard tower shall be elevated per the drawings and be constructed of reinforced concrete frame with brick masonry infill walls, a wood floor hatch access door, and awning type windows as indicated. Glazing for the windows shall be minimum 8mm thick Plexiglas. Windows shall be located on all 4 sides to provide a 360 degree viewing area. The tower shall be supported on reinforced concrete footings located below the frost line or a minimum of 800mm below grade, whichever is greater. An access ladder, constructed per OSHA Standards, shall be constructed to provide entry to the tower through the wooden floor hatch door. Guard towers shall be provided with general lighting and shall be fitted with one 360-degree omnidirectional, ballistic resistant searchlight. Two weather-resistant duplex receptacles shall be provided as required for general use. The area in the immediate exterior vicinity of the guard tower shall be provided with an all weather non-slip surface and shall be graded to sufficiently drain away from structure. Position lights to provide overlapping coverage and to avoid illuminating guard positions. Do not use white lights inside guard towers. Use red, blue, or black lamps in interior guard tower lighting. Steel surfaces shall be provided with a galvanized coating. Exposed surfaces shall be provided with a shop primed finish in addition to the galvanized coating. Commercial grade hinges are required on personnel door and awning windows – three hinges per window / door. Door pull to be standard door pull product or can be fabricated out of metal or wood. Product should be sturdy and functional. Install door stop in door frames on all sides. Install slide bolts on all doors or some equivalent locking device. Pre

drill holes in Plexiglas for attachment with screws. Windows can be configured to swing up or to slide in a wood track in order to open. The roof shall have a gutter and downspout system to evacuate rain accumulation. The down spout shall run the entire height of the tower and drain at the finished ground level to a splash block. The stairs and platforms shall be constructed per OSHA Standards, with entry to the tower through a lockable security door. Guard Tower shall have electric unit heating and capable of maintaining a minimum temperature of 20 degrees C. Guard towers shall be provided with general lighting and shall be fitted with one 360-degree omni-directional searchlight. Do not use white lights inside guard towers. Use red, blue, or black lenses in interior guard tower lighting. One weather-resistant duplex receptacle shall be provided as required for general use. The area in the immediate exterior vicinity of the guard tower shall be provided with an all weather non-slip surface and shall be graded to sufficiently drain away from structure. Provide conduit to the tower for installation of a future internal communication system. All four guard towers will be placed at an offset in the corners of the perimeter compound; Contractor will insure that all seismic requirements are met in the design and construction of the facility.

## **FIGHTING POSITIONS**

### **MOUNTED FIGHTING POSITION**

Provide where shown on the drawings. Mounted fighting position shall provide vehicle access to a height at the perimeter wall where it is able to fire the mounted weapon over the wall at oncoming forces. Sufficient height shall be provided to prevent damage to the barbed/concertina wire on top of the wall. Ramp access shall allow the vehicle rapid ascent and descent allowing freedom of movement from position to position. HESCO barriers shall prevent the vehicle from striking the perimeter wall and causing potential damage. Height of the firing position shall be adjusted to match the requirements of the vehicles to be utilized.

### **DISMOUNTED FIGHTING POSITION**

Provide where shown on the drawings. Dismounted fighting positions shall provide personnel to fire over the top of the perimeter wall and under the barbed/concertina wire barrier. Height of the platform shall be approximately 1.2 meters below the crown of the wall. HESCO barriers may be used to provide cover for the fighting position and setting up crossing fields of fire.

### **MOUNTED AND DISMOUNTED FIGHTING POSITIONS**

Provide where shown on the drawings. Combinations of mounted and dismounted fighting positions shall be constructed as shown.

## **COMPOUND ILLUMINATION SYSTEM**

Provide as shown on the drawings. Lighting requirements and pole separation shall be per the schedules provided on the drawings and specifications.

## **SECURITY COMMUNICATION SYSTEMS LOUDSPEAKERS AND ALARM SYSTEM**

Provide as shown on the drawings. Loud Speaker & Alarm System shall be sized to alert the entire compound via panic button from any tower or guard post station. Speaker & Alarm System shall be exterior grade components to withstand severe weather conditions of cold, heat, rain, sleet, and dust storms and to be completely understandable during these conditions from any point within the compound. All wires shall be installed in conduits.

## **TRASH POINT**

Provide as shown on the drawings. The Contractor shall place, in a location convenient for easy removal, a trash collection point. It shall be located outside the compound walls. The trash point shall be a 1.8 m X 1.8 m concrete pad with a 1.8 meter tall wooden fence about the perimeter. One side shall have a 1.2 m wide gate entrance.

## **STORAGE CONTAINER**

Provide as shown on the drawings. Provide an 8x20 ft (2413 mm x 6045 mm) storage container in accordance with the drawings. Orient the container as shown in the drawing. Maintain the operable end doors. The container will be used as-is, no finishes are required on the inside.

## **CHANGE/LOCKER FACILITY**

Provide as shown on the drawings. The contractor shall construct a change locker facility at the location shown on the drawings. Change/locker facility shall be standard conex construction with dimensions of 8x20 ft (2413 mm x 6045 mm). Exterior doors shall be insulated hollow steel and key lockable. Each facility shall have a unique lock and key set. The change/locker facility shall have ductless split pack heating and cooling, wall, floor, and ceiling insulation, gypsum board for walls and ceiling, with fresh paint, linoleum or vinyl flooring. (Carpet will not be acceptable), ceiling lights. Contractor shall provide and install a metal slope roof with minimum 18 inch (100mm) overhang. Contractor shall furnish one minimum 4 feet (1219 mm) roof cover and boot scrapper at each door way.

## **ID PASS / RECEPTION BUILDING**

Provide as shown on the drawings. Provide a 4x20 ft (2413 mm x 3023 mm) storage container in accordance with the drawings. Orient the container as shown in the drawing. Container shall be fitted with wrap around desk and counters as shown. Exterior doors shall be insulated hollow steel and key lockable. Facility shall have a unique lock and key set. The change/locker facility shall have ductless split pack heating and cooling, wall, floor, and ceiling insulation, gypsum board for walls and ceiling, with fresh paint, linoleum or vinyl flooring, (carpet will not be acceptable), ceiling lights. Contractor shall provide and install a metal slope roof with minimum 18 inch (100mm) overhang. Contractor shall furnish one minimum 4 feet (1219 mm) roof cover and boot scrapper at door way. One lockable man-door shall be provided for entry to the container. Unit shall be placed on concrete foundations at a minimum of 150 mm above grade and in a location which is not subject to flooding. Exterior lighting shall be provided.

## **QUICK REACTION FORCE BUILDING.**

Construct as shown on the drawings a quick reaction force (QRF) building. The facility shall be reinforced concrete or CMU block construction with sloping metal roof. Dimensions are as shown and room layout is shown. The QRF building shall consist of an administration office, an operations office, a classroom, dining area, kitchen, living room, laundry room, berthing for twelve personnel, officer quarters for three officers with attached bathroom to include toilet, sink, shower, and all standard toilet room accessories, and one common shared latrine facility. Latrine shall consist of (2) showers, four (4) sinks, and four (4) eastern style toilets with toilet partitions in the latrine located within the addition. Air conditioning and heating shall be included, for the facility. Electric cooking stove top, sink, cabinets and countertop, and refrigerator for the kitchen are included.

## **PERSONNEL BUNKERS**

### **CONCRETE**

Provide personnel bunkers in the quantity and locations shown on the drawings. The personnel bunker shall be designed to protect occupants or materials in the building such that the building is reusable immediately and the occupants sustain minor injuries. Doors shall be placed such that occupants and materials are not exposed to line-of-sight travel of shrapnel or debris. Exterior walls shall be able to resist the blast effects of an indirect explosive. Walls shall be reinforced concrete or reinforced concrete masonry (CMU) construction or steel moment resisting construction with no windows. The roof shall be pitched and constructed of reinforced concrete with a maximum span of one-half the height of the supporting walls. Alternatively, a moment resisting steel frame with dual layers of sand bags may be provided. The protective rating of the building shall have a K or 40 and shall protect occupants from blast overpressures of approximately 1.2.

## **SANDBAG LINED**

Provide personnel bunkers in the quantity and locations shown on the drawings. The personnel bunker shall be designed to protect occupants or materials in the building such that the building is reusable immediately and the occupants sustain minor injuries. The personnel bunker shall be constructed of a concrete reinforced box culvert with the dimensions shown. Sandbags shall be stacked in an alternating pattern to prevent slippage. Floor of the bunker shall be 150mm compacted gravel. Sandbag walls shall be 450mm thick (minimum), Bunker roof shall be 450mm (minimum) and shall be 2 layers of sandbags taller at the center of the roof than at the edges to provide a roof slope which will facilitate the rolling of explosives off of the roof of the bunker. HESCO barriers shall be placed at the ends of the reinforced box culvert to prevent line of sight exposure from flying debris.

## **WOOD STOVE KITCHEN ENCLOSURE**

Provide as shown on the drawings. Provide a steel frame, metal panel enclosure for a wood stove kitchen. Enclosure shall have metal wall panels on three sides and a metal roof, as illustrated in the contract documents, to form a weather tight enclosure on three sides. Foundation shall be 3.6m x 3.6 m reinforced concrete pad with thickened slab around the perimeter. Capillary water barriers shall be provided under the slab. Steel framing members shall conform to ASTM A 653A or 653M and ASTM A 36A or 36M. Sheet metal for wall panels and roofing shall conform to ASTM A-153/A-153M, ASTM A-653A/A-653M and ASTM A-1008/A-1008M. Roofing panels, wall panels, and fascia shall not be less than 24 gauge (0.70 mm) before coating. Exterior panel finish shall be two (2) coats of baked enamel coating or silicone polyester coating consisting of an epoxy primer and a finish coat of silicone polyester or approved equal. Inside shall be primed. Colors shall be from manufacturer's standard color chart and approved by the Contracting Officer.

## **OVERHEAD CANOPY**

Provide as shown on the drawings. The contractor shall construct an overhead canopy at the location shown on the drawings. Vertical supports shall be attached to concrete foundations as shown using embedded anchor bolts. The minimum clear height should be as shown on the drawings or 17 ft 6 inches (5.4 m), if not specified, to support common vehicle heights and facilitate use of the overhead canopy for lighting or security equipment. The clear height is measured from the pavement to the lowest point on the overhead canopy including light fixtures and other equipment. The architectural appearance of the canopy should match surrounding features and meet the requirements of the installation exterior architectural plan. Avoid the use of structural elements that could obstruct visibility for entry controllers.

## **COVERED CARPORT**

Provide as shown on the drawings. The contractor shall construct a covered carport at the location shown on the drawings. Vertical steel columns shall be attached to the concrete foundations as shown using embedded anchor bolts. Use continuous metal roof sheets from eave to eave to avoid constructing roof seams. Metal roof sheets shall be fabricated of steel thickness required by the design and shall be galvanized. The minimum clear height should be as shown on the drawings or 17 ft 6 inches (5.4 m), if not specified, to support common vehicle heights. The clear height is measured from the floor slab to the lowest point on the carport including light fixtures and other equipment. Provide a 200mm thick reinforced concrete floor slab with a minimum 28 day compressive strength of 21 MPa.

## **CIVIL UTILITIES**

### **WATER**

### **GENERAL**

Provide as shown on the drawings or called for in the task order. The Contractor shall provide water to facilities indicated on the drawings in the quantities indicated. If not provided, in accordance with the following

requirements and the AED Design Guide, latest edition. Water system shall consist of distribution mains, branches, service connections to include all pipe, valves, bends, thrust blocking, fittings and appurtenances. Exterior water line construction shall include service to all buildings as shown or described in the Scope of Work. System capacity or average daily flow, shall be as indicated in the documents provided or the quantity derived from a per capita average daily demand (ADD) of 155 liters (or 41 gallons) per capita per day (lpcd) times a capacity factor, times the effective population. A capacity factor of 1.5 shall be used if the effective population is less than or equal to 5,000. The capacity factor for larger populations is found in UFC 3-230-07a, Water Supply: Sources and General Considerations guidance. In the event potable or non-potable use water is required prior to completion of the water facilities infrastructure the Contractor may be issued a Request for Proposal to provide non-potable (tank truck) and potable (bottled or other reliable source) consumption. Provide a minimum of one (1) outside water hydrant (hose spigot) for all buildings with water service. All building with water supply shall have a water meter installed in a locked cabinet area inside the building.

## **WATER WELLS**

### **WELL AND PUMP**

The contractor shall construct water well(s) inside the compound, to provide sufficient supply for the facility. The contractor shall provide all submittals per the AED Design Requirements documents and specifications and shall stage construction based on required review approvals. The new well capacity shall be based on the allowable safe yield of the new well determined by a well pump test as described in the USACE-AED Water Well Guide Specification. The new well site shall be at a location specified by the Government. The new well site shall be no closer than 60 meters from any existing wells. Well construction shall be in accordance with the USACE-AED Water Well Guide Specification. If unavailable within the compound, Contractor shall immediately notify the COR for resolution. Off site water wells then may be considered upon approval by the COR. Unless noted elsewhere, well and well pump shall be capable of supplying capacity and total dynamic head (TDH) based on a single day average daily flow over a 16 hour period. Well shall be drilled to a minimum depth of 20 m below the existing water table.

Well construction shall be in accordance with AED Design Requirements - Well Pumps & Well Design/Specifications, latest version. All design requirements, material specifications, and testing contained in this document shall be used and submittals shall be made promptly in accordance with Section 01335. Submittal of test well data and testing shall be provided prior to permanent well installation.

It is acknowledged that water may not be available at the site despite contractor good faith efforts to find it. The contractor shall drill a minimum of two wells at the site to a minimum depth of 120 meters. If this is done without result, the contractor will be considered to have fulfilled the terms of the contract and will be entitled to the full price of the contract CLIN for well drilling. However, the contractor must furnish all other parts of the water distribution system as described in the specifications.

Surface drainage within 30 m of wellhead shall ensure no ponding, flooding or collection of runoff adjacent to the well. This can be accomplished through surface grading or use of gravel drains to modify site drainage in the vicinity of the well. Contractor shall identify all sources of contamination and ensure the proposed well site meets minimum standoff distances as indicated below:

Sewage storage areas (outhouses, tanks, individual sewage pits, lagoons, and WWTP) – 30 m

Septic fields (infiltration galleries) – 30 m

Fuel storage, engine maintenance/repair – 30 m

Well pump testing and water clarity testing after well development shall be per the requirements in AED Design Requirements - Well Pumps & Well Design/Specifications, latest version.

A submersible, centrifugal pump shall be installed inside the casing set no more than 1.5 meters from the base of the excavation. Control of the pump shall be by means of a Hand-Off-Auto (HOA) switch. In the “Auto” position, the pump shall be started and stopped automatically by water levels in the water storage tank. Pump shall start at low level and shall stop at high level. Level controls shall be adjustable. Manual start shall be the Hand position.

Provide bladder style expansion tank for well pump to minimize pressure surges and water hammer effects.



## **HAND PUMP**

A mechanical hand pump capable of providing a flow equal to 5 gallons per minute is required as a backup.

## **WATER QUALITY SAMPLING AND ANALYSIS**

The Contractor shall perform water quality sampling and testing at the source. The Contractor shall utilize well-qualified and equipped testing capability in the project site area, if available. If professional testing services are not available in the area, the Contractor will submit an alternative practical testing source for approval. Raw water quality criteria for Water Quality and Criteria Standards, and shall address the

See USACE-AED Well Pumps & Well Design Guide with Attachment A – Guide Specifications for Drinking Water Wells, latest version for requirements for laboratory testing.

## **RAW WATER DISINFECTION**

Contractor shall perform disinfection of the well water in accordance with AED Design Requirements - Well Pumps & Well Design/Specifications, latest version. Bacteriological samples shall be collected and examined in accordance with Standard Methods for the Examination of Water and Wastewater by a qualified lab as approved by the Contracting Officer.

## **WELL HOUSE**

At new wells or springs, construct a permanent well house with reinforced concrete slab floor. The floor of the well house shall slope away from the casing approximately 3 mm per 300 mm (1/8" per foot) and drain to the outside. Floor of well house shall be minimum 300mm above adjacent grade. The well house design should be such that the well pump, motor, and drop pipe could be removed readily by providing an insulated hatch in the building roof provided with a hasp and lock. The well house shall protect valves and pumping equipment plus provide freeze protection for the pump discharge piping beyond the check valve. The well house shall be insulated and have a heating unit provided. The entry door shall be made of heavy duty metal and metal frame with no louvers. The well shall be protected from unauthorized use by a security fence with lockable gate. Provide outriggers, barbed wire and concertina wire on fence and gate.

## **HYDRO-PNEUMATIC SYSTEM AND WELL WATER PUMPS**

Provide hydropneumatic tanks and pumps as shown on the drawings or called for in the task order. An electric submersible well pump will pressurize the system by supplying water to a hydro-pneumatic tank and be capable of providing output for twice the average daily demand and provide hydro-pneumatic tank pressure. A mechanical hand pump capable of providing a flow equal to 5 gallons per minute is required as a backup. The hand pump will be connected directly to the electric well pump effluent piping thereby allowing the system to be pressurized by either pump, although the mechanical pump shall provide discharge pressure of 172 kPa (25 psi) when the system is supplied by the hand pump alone. The pumps and controls shall be designed to supply and maintain acceptable system pressure throughout the distribution network given the full range of flow conditions (low flow to peak). The pump discharge shall have a gate valve, check valve, pressure gage, and air relief valve.

Volume and pressure regulation to maintain a pressure range provided in the technical requires shall be based on a rate equal to the average daily flow

## **SERVICE BOOSTER PUMPS**

Provide as shown on the drawings or called for in the task order. Contractor shall provide a booster pump station with end suction or split case double suction horizontal split case (frame mounted) centrifugal pumps arranged in parallel for pumping water storage into the main distribution system. The pumps and controls shall be designed to supply and maintain acceptable system pressure throughout the distribution network given the full range of flow conditions (low flow to peak). Provide suitable expansion tank for booster pump system sized for anticipated pressure surges, if hydro pneumatic tanks are not to be used. The suction side of the service booster pumps shall have an eccentric reducer and gate valve installed. The discharge side shall have a gate valve, check valve between the pump and the gate valve and concentric reducer, pressure gage and air relief valve.

Discharge capacity and total dynamic head (TDH) –calculations per the AED Design Requirements – Booster Pumps. For installations with fewer than 400 persons, the capacity shall be based the installation wide, total fixture unit flow. For installations with greater than 400 persons, the capacity shall be based on the installation wide, total fixture unit flow or 2 times the average daily flow, whichever is greater. Three identical pumps shall be provided which are all sized to deliver 50% of the calculated capacity. Pumps shall automatically alternate to distribute wear and shall automatically turn on and off based on demand and system pressures. The total dynamic head (TDH) of the booster pumps shall be calculated to maintain a minimum, residual system pressure of 40 psi at the calculated capacity unless stated otherwise in the contract documents.

## **WATER STORAGE TANK**

Provide as shown on the drawings or called for in the task order. Contractor shall provide a steel or concrete ground storage reservoir (GST) to be located on the ground surface. Volume of the GST shall be a minimum storage volume of a full days demand. The Contractor shall verify storage volume requirements based on final design population. The storage facility shall be located above drainage areas and locations subject to flooding as approved by the Contracting Officer. The storage facility shall be located on the higher elevations of the site to promote gravity flow and reduce pumping requirements. Overflow and air vents shall be screened so that birds, rodents and debris cannot enter the reservoir. The tank shall meet all applicable codes for potable water storage. The interior coatings for the tank shall meet NSF/ANSI 61 requirements. Capacity shall be based on average daily flow times the capacity factor.

## **HYDRO-PNEUMATIC WATER STORAGE TANK**

Provide as shown on the drawings or called for in the task order. The Contractor shall provide horizontally mounted and insulated above ground hydro-pneumatic tank(s) containing water and compressed air located adjacent to the well house to maintain system pressures between 275 kPa to 282 kPa (40 psi to 70 psi). A compressor is required to charge the tank with air. At low level the water remaining in the tank shall be at least ten percent of the capacity of the tank. The tank size shall be determined such that the pump cycles not less than 4 times per hour nor more than 10 times per hour. Storage may be divided between duplicate units in cases where a single tank would be too long to easily transport to the site. Volume of the tank shall be a minimum storage volume of a full days demand. The Contractor shall verify storage volume requirements based on final design population. The storage facility shall be located above drainage areas and locations subject to flooding as approved by the Contracting Officer.

## **DISINFECTION & CHLORINATION SYSTEM**

### **CHLORINE SYSTEM**

Provide as shown on the drawings or called for in the task order. Use hypochlorite compounds for disinfection. A hypo-chlorinator shall be used to feed a sodium hypochlorite solution of 5-15% available chlorine into the system. Hypochlorite compound may be a liquid or solid form. The hypo chlorination system shall consist of a chemical solution tank for hypochlorite, diaphragm-type pump, power supply, water pump, pressure switch and storage tank (optional hydro-pneumatic/storage). The pump shall feed a hypochlorite solution in proportion to the water demand. The hypo-chlorinator shall have a pumping rate, liters per day (lpd) (gallons per day (gpd)) adequate to deliver 5 percent (%) available hypochlorite solution adjustable to the quantity of water being produced from the source. Dosage rate will vary somewhat depending on actual pump production rate and available residual chlorine in the system. Contractor shall determine the required dosage rate milligrams per liter (mg/l) to maintain the required chlorine residual (usually 0.2-0.4mg/l) in the distribution system. Chlorine solution tank shall be large enough to hold a three days supply of hypochlorite solution. A fresh solution shall be prepared every two or three days because the solution may lose its strength over time and this will affect the actual chlorine feed rate. The hypochlorite shall be stored in a cool dry place. Sodium hypochlorite can lose from two to four percent of its available chlorine content per month at room temperature. Contractor shall verify required minimum residual chlorine in accordance with local requirements verified and approved by the Contracting Officer. The chlorination system shall have the capability for manually adjusting the dosage rate and be installed in such a manner that the system can be easily disconnected and bypassed in the event of health safety or routine maintenance and repair.

Disinfection of water mains shall be in accordance with AWWA standard C651-86 and disinfection of storage facilities in accordance with AWWA standard C652-86.

## **CHLORINE SHELTER**

Contractor shall furnish a shelter as per chlorine manufacturer's installation requirements. The Contractor shall provide manufacturers catalog information and shop drawing to the Contracting Officer for approval.

## **WATER DISTRIBUTION SYSTEM**

### **GENERAL**

When required in the drawings or task order, the Contractor shall connect to the existing water distribution system and shall provide all required piping and appurtenances. All aspects of the distribution network shall adhere to requirements provided in the AED Design Requirements – Water Tanks and System Distribution, latest version. The distribution network shall be laid out such that dead ends do not exceed 30m (99 feet). Use similar piping materials for all buildings and pipe runs in the distribution system for efficiency of future maintenance activities. No distribution lines shall be less than 100mm (4 inches) in diameter. Dead end sections shall not be less than 150mm (6 inch) diameter and shall either have blow off valves or fire hydrants (flushing valves) installed for periodic flushing of the line. Any pipe with a fire hydrant on the line shall be at least 150mm (6 inch) in diameter. Water supply distribution shall connect to a building service at a point approximately 1.5m (5 feet) outside the building or structure to which the service is required. All piping and joints shall be capable of at least 1.03 MPa (150 psi) leakage testing and 1.38 MPa (200 psi) hydrostatic test pressure unless otherwise specified. Pipes should be adequate to carry the maximum quantity of water at acceptable velocities not to exceed 1.5m/sec ( 5 ft/sec) at maximum flows not to exceed 2.8m/sec (9.2ft/sec). Pressure shall be from 276kPa (40 psi) to 517kPa (75 psi) at all points of the distribution system. If high pressures greater than 690kPa (100 psi) cannot be avoided, pressure-reducing valves shall be used. A lower system operating pressure other than stated above shall be considered a deviation in the technical requirements requiring Contracting Officer approval.

Contractor shall not use HDPE pipe and fittings, regardless if existing project water distribution system had this pipe material. Pipe material shall meet the requirements of 2.5.3.2 Pipe.

Adequate cover must be provided for frost protection. A minimum cover of 800mm (2'-8") is required to protect the water distribution system against freezing. Water lines less than 1.25 meters (4 feet) deep under road crossings shall have a reinforced concrete cover of at least 150 mm (6 inch) thickness around the pipe extending out to 1m from each road edge.

### **PIPE**

The Contractor shall provide pipe of adequate strength, durability and be corrosion resistant with no adverse effect on water quality.

## **WATER MAINS AND BRANCHES**

Water pipe material for water mains and branches shall be PVC or Ductile Iron (DI). Minimum pipe diameter used in the network shall be 100mm (4 inch). Building service lines from the distribution network will be sized according to guidance provided below. The exterior surface of the pipe must be corrosion resistant. Pipe diameters shall be 300mm (12 inch), 250mm (10 inch), 200mm (8 inch), 150mm (6 inch) and 100mm (4 inch). If Ductile Iron (DI) pipe is installed underground the pipe shall be encased with polyethylene in accordance with AWWA C105. Ductile iron pipe shall conform to AWWA C104. DI fittings shall be suitable for 1.03MPa (150psi) pressure unless otherwise specified. Fittings for mechanical joint pipe shall conform to AWWA C110. Fittings for use with push-on joint pipe shall conform to AWWA C110 and C111. DI fittings shall be cement mortar lined (standard thickness) in accordance with C104. All pipes and joints shall be capable of at least 1.03 MPa (150 psi) and 1.38 MPa (200psi) hydrostatic test pressure unless otherwise specified herein. Polyvinyl Chloride (PVC) pipe shall conform to ASTM D 1785. Plastic pipe coupling and fittings shall be manufactured of material conforming to ASTM D 1784, Class 12454B. PVC screw joint shall be in accordance with ASTM D 1785, Schedules 40, 80 and 120. PVCu pipe couplings and fittings shall be manufactured of material conforming to ASTM D 1784, Class

12454B. Pipe less than 80mm (3 inch), screw joint, shall conform to dimensional requirements of ASTM D schedule 80. Elastomeric gasket-joint, shall conform to dimensional requirements of ASTM D 1785 Schedule 40, PVCu (or uPVC) pipe and fittings shall have SDR that provide equal or superior strength properties to ASTM 1785 SCH 40 or SCH 80 pipe and fittings.

## **WATER SERVICE**

Water service connections to buildings shall vary from 19mm, 25mm, 38mm, 75mm, to 100mm as calculated, depending on the maximum flow velocity and minimum pressure requirements as determined by hydraulic analysis. Pipes for service connections may be smaller as required by plumbing code (IPC). Pipe service connections from the distribution main to the building shall be either Polyvinyl Chloride (PVC) plastic Schedule 80 ASTM D 1785 or copper tubing conforming to ASTM B 88M, Type K, annealed. PVC pipe couplings and fittings shall be manufactured of material conforming to ASTM D 1784, Class 12454B. Contractor shall not use either HDPE for any of the water pipes.

## **HYDROSTATIC, LEAKAGE AND DISINFECTION TESTS**

The Contracting Officer will be notified not less than 48 hours in advance of any water piping test and will be given full access for monitoring testing procedures and results. Where any section of water line is provided with concrete thrust blocking for fittings or hydrants, tests shall not be made until at least 5 days after installation of concrete thrust blocking, unless otherwise approved. Pressure and leakage testing shall be as specified in AED Design Requirements – Water Tank and Water Distribution Systems, latest version.

### **PRESSURE TEST**

After the pipe is laid, the joints completed, and the trench partially backfilled leaving the joints exposed for examination, the newly laid piping or any valved section of piping shall, unless otherwise specified, be subjected for 1 hour to a hydrostatic pressure test of 1.38 MPa (200 psi). Each valve shall be opened and closed several times during the test. Exposed pipe, joints, fittings, hydrants and valves shall be carefully examined during the partially opened trench test. Joints showing visible leakage shall be replaced or remade as necessary. Cracked or defective pipe, joints, fittings, hydrants and valves discovered following this pressure test shall be removed and replaced and retested until the test results are satisfactory.

### **LEAKAGE TEST**

Leakage tests shall be conducted after all pressure tests have been satisfactorily completed. The duration of each leakage test shall be at least 2 hours, and, during the test, water lines shall be subjected to not less than 1.38 MPa (200 psi). Leakage is defined as the quantity of water to be supplied into the newly laid pipe, or any valved or approved section, necessary to maintain pressure to within 34.5kPa (5 psi) of the specified leakage test pressure after the pipe has been filled with water and all air expelled. Pipe installation will not be accepted if leakage exceeds the allowable leakage, as determined by the following formula:

$$L = 0.0001351ND (P \text{ raised to } 0.5 \text{ power}), \text{ where:}$$

L = Allowable leakage in gallons per hour

N = Number of joints in the length of pipeline tested

D = Nominal diameter of the pipe in inches

P = Average test pressure during the leakage test, in psi gauge

Should any test of pipe disclose leakage greater than that calculated by the above formula, the defective joints shall be located and repaired until the leakage is within the specified allowance, without additional cost to the government.

## **BACTERIOLOGICAL DISINFECTION AND TESTING**

### **DISINFECTION PROCEDURE**

Before acceptance of potable water operation, each unit of completed waterline shall be disinfected as prescribed by AWWA C651. After pressure tests have been completed, the unit to be disinfected shall be thoroughly flushed with water until all entrained dirt and mud have been removed before introducing the chlorinating material. Flushing will be performed in a manner and sequence that will prevent recontamination of pipe that has previously been disinfected. The chlorinating material shall be liquid chlorine, calcium hypochlorite, or sodium hypochlorite. The chlorinating material shall provide a dosage of not less than 50 ppm and shall be introduced into the water lines in an approved manner. Polyvinyl Chloride (PVC) pipelines shall be chlorinated using only the above-specified chlorinating material in solution. The agent shall not be introduced into the line in a dry solid state. The treated water shall be retained in the pipe long enough to destroy all non-spore forming bacteria. Except where a shorter period is approved, the retention time shall be at least 24 hours and shall produce not less than 25 ppm of free chlorine residual throughout the line at the end of the retention period. Valves on the lines being disinfected shall be opened and closed several times during the contact period. The line shall then be flushed with clean water until the residual chlorine is reduced to less than 1.0 ppm. During the flushing period, each fire hydrant on the line shall be opened and closed several times.

### **SAMPLING**

For each building connected to the water system, personnel from the Contractor's commercial laboratory shall take at least 3 water samples from different points, approved by the Contracting Officer, in proper sterilized containers and perform a bacterial examination in accordance with approved methods. The commercial laboratory shall be verified to be qualified by the appropriate authority for examination of potable water. Contractor shall submit a water sampling protocol for approval. This shall include at a minimum the name of the laboratory, parameters to be tested, the Company conducting the sampling, and the sample locations.

### **ACCEPTANCE REQUIREMENTS**

The disinfection shall be repeated until tests indicate the absence of bacteria for at least 2 full days. The unit will not be accepted until satisfactory bacteriological results have been obtained. All retests shall be conducted at the Contractor's expense.

### **TIME FOR MAKING TESTS**

Except for joint material setting or where concrete thrust blocks necessitate a 5-day delay, pipeline jointed with rubber gaskets, mechanical or push-on joints, or couplings may be subjected to hydrostatic pressure, inspected, and tested for leakage at any time after partial completion of backfill.

### **CONCURRENT TESTS**

The Contractor may elect to conduct the hydrostatic tests using either or both of the following procedures. Regardless of the sequence of tests employed, the results of pressure tests, leakage tests, and disinfection shall be recorded for submission and approval. Replacement, repair or retesting required shall be accomplished by the Contractor at no additional cost to the Government. Pressure and leakage testing may be conducted concurrently. Hydrostatic tests and disinfection may be conducted concurrently using water treated for disinfection to accomplish the hydrostatic tests. If water is lost when treated for disinfection and air is admitted to the unit being tested, or if any repair procedure results in contamination of the unit, disinfection shall be re-accomplished.

### **VALVES**

Valves (Gate valves w/box) shall be placed at all pipe network tees and cross intersections, and the number of valves shall be one less than the number of lines leading into and away from the intersection. For isolation purposes valves shall be spaced not to exceed 3600 mm (12 feet). Gate valves shall be in accordance with AWWA C 500 and/or C509. Butterfly valves (rubber seated) shall be in accordance with C504 et al. The valves and valve boxes

shall be constructed to allow a normal valve key to be readily used to open or close the valve. Provide traffic-rated valve boxes. Provide concrete pad, 1 meter (3'-4") square, for all valve boxes.

## **VACUUM AND AIR RELEASE VALVES**

Air release valves are required to evacuate air from the main high points in the line when it is filled with water, and to allow the discharge of air accumulated under pressure. Vacuum relief valves are needed to permit air to enter a line when it is being emptied of water or subjected to vacuum. Contractor shall submit manufacturer's data for properly sized combination air and vacuum release valves and determine their locations on the distribution system subject to review and approval of the Contracting Officer.

## **BLOW-OFF VALVES**

The Contractor shall provide 40-50mm (1-5/8" – 2") blow-off valves at ends of dead end mains. Valves should be installed at low points in the mains where the flushing water can be readily discharged to natural or manmade drainage ditches, swales or other.

## **THRUST BLOCKING**

Contractor shall provide concrete thrust blocking at any point where the layout of the system changes the direction of the flow, increases the velocity, or decreases or stops the flow. At these points, the pipes and fittings must be anchored and kept from moving or pulling apart by the use of thrust blocks installed against undisturbed earth.

## **SANITARY SEWER**

### **GENERAL**

When required in the drawings or task order, the Contractor shall provide sanitary sewer collection, treatment or disposal facilities at this site. Contractor shall tie into the existing sewer system at the closest point possible and shall confirm the capacity of the existing system with the COR prior to installing new piping. All aspects of the system being provided shall meet requirements set forth in the document AED Design Requirements Sanitary Sewer and Septic Systems, latest version. The Contractor shall obtain topographic information or other maps that show vegetation, drainage channels and other land surface features such as underground utilities and related structures that may influence the design and layout of the collection system. If maps are not available, or do not provide satisfactory information or sufficient detail of the site, field surveys shall be performed. Sanitary sewers less than 1.25 meters (4 feet) under road crossings shall have reinforced concrete cover at least 150 mm (6 inch) thick around the pipe. Concrete cover will extend out to at least 1 m from each road edge.

Exterior sanitary sewer line construction shall include service to all buildings as required. Contractor shall design sanitary sewer collection system using approved field survey data and finished floor elevations. Depending upon the topography and building location, the most practical location of sanitary sewer lines is along one side of the street. In other cases they may be located behind buildings midway between streets. Main collection sewers will follow the most feasible route to the point of discharge. The sewer collection system shall be designed to accommodate the initial occupancy and a reasonable expansion capability. Sewer collection capacity shall be based on the two times the average daily wastewater flow unless minimum diameter specified is adequate to provide flow and required maximum velocity; wastewater flow through the system shall be distributed on the basis of fixture unit flow in each the buildings serviced by multiplying the proportion of the total fixture flow from each building or facility times the total wastewater flow for the project or installation as determined above.

All sewers shall be located outside of the roadways as much as practical, and minimize the number of roadway crossings. To the extent practical, a sewer from one building shall not be constructed under another building, or remain in service where a building is subsequently constructed over it. Construction required shall include appurtenant structures and building sewers to points of connection with building drains 1.5m (5 feet) outside the building to which the sewer collection system is to be connected.

The Contractor shall use the following criteria where possible to provide a layout which is practical, economical and meets hydraulic requirements:

jjjjjj. Follow slopes of natural topography for gravity sewers.

kkkkkk. Check subsurface investigations for groundwater levels and types of subsoil encountered. If possible, avoid areas of high groundwater and the placement of sewers below the groundwater table.

llllll. Avoid routing sewers through areas which require extensive restoration or underground demolition

mmmmmm. Depending upon the topography and building locates, the most practical location of sanitary sewer lines is along one side of the street. In other cases they may be located behind buildings midway between streets. The intent is to provide future access to the lines for maintenance without impacting vehicular traffic.

nnnnnn. Avoid placing manholes in low-lying areas where they could be submerged by surface water or subject to surface water inflow. In addition, all manholes shall be constructed 50 mm higher than the finished grade, with the ground sloped away from each manhole for drainage.

oooooo. Sewer lines shall have a minimum of 800 mm of cover for frost protection.

pppppp. Locate manholes at change in direction, pipe size, or slope of gravity sewers.

qqqqqq. Sewer sections between manholes shall be straight. The use of a curved alignment shall not be permitted.

rrrrrr. If required by the design, locate manholes at intersections of streets where possible. This minimizes vehicular traffic disruptions if maintenance is required.

ssssss. Sewer lines less than 1.25 meters deep under road crossings shall have a reinforced concrete cover of at least 150mm thickness around the pipe or shall utilize a steel or ductile iron carrier pipe. It is recommended to continue the reinforced concrete cover or carrier pipe a minimum of one (1) meter beyond the designated roadway.

tttttt. Verify that final routing selected is the most cost effective alternative that meets service requirements.

## **PROTECTION OF WATER SUPPLIES**

The Contractor shall ensure that the sewer design meets the following criteria:

uuuuuu. Sanitary sewers shall be located no closer than 30m (100 feet) horizontally to water wells or reservoirs to be used for potable water supply.

vvvvvv. Sanitary sewers shall be no closer than 3 m (10 feet) horizontally to potable water lines; where the bottom of the water pipe will be at least 300mm (12 inches) above the top of the sanitary sewer, horizontal spacing shall be a minimum of 1.8m (6 feet).

wwwwww. Sanitary sewers crossing above potable water lines shall be constructed of suitable pressure pipe or fully encased in concrete for a distance of 2.7m (9 feet) on each side of the crossing. Pressure pipe will be as required for force mains in accordance with local standards and shall have no joint closer than 1m (3 ft) horizontally to the crossing, unless the joint is fully encased in concrete.

## **QUANTITY OF WASTEWATER**

The Contractor shall verify the average daily flow considering both resident (full occupancy) and non-resident (8hr per day) population. The average daily flow will represent the total waste volume generated over a 24-hour period, and shall be based on the total population of the facility and water usage rate of 155 liters (41 gallons) per capita per day (water usage). The wastewater flow rate shall be calculated as approximately 80% of water usage rate, or 124 liters (33 gallons) per capita per day times the capacity factor times the effective population.

## **GRAVITY SEWER**

Sanitary sewers for facilities serving populations less than 400 persons shall have a minimum diameter of 150mm (6 inches) and shall be installed at a minimum slope of 1%.

Unless otherwise indicated (see Building Connections and Service Lines), gravity sewer pipe shall be installed in straight and true runs in between manholes with constant slope and direction. Adequate cover must be provided for frost protection. A minimum cover of 800 mm (2'-8") will be required to protect the sewer against freezing.

## **MANHOLES**

The Contractor shall provide standard depth manholes (MH), (depth may vary) an inside dimension of 1.2m (4 ft). Manholes shall be made of cast-in-place reinforced concrete with reinforced concrete cover. Alternate pre-cast manhole option shall taper to a 750 mm (30-inch) cast iron frame that provides a minimum clear opening of 600 mm (24 inches). In every case, the manholes, frames and covers shall be traffic rated, H-20 load rating. All manholes shall be provided with a concrete bench with a flow line trough, smoothly formed to guide waste flow to the outlet pipe from the inlet pipe(s). The top surface of the bench shall be above the crown of all pipes within the manhole. All surfaces of the bench shall be sloped smoothly toward the trough to guide flow, even under peak flow conditions. Sanitary sewer lines shall enter at the manhole flow line. Where the invert of the inlet pipe would be more than 0.5 meter above the manhole floor, a drop inlet shall be provided. No internal drop structures shall be permitted at lift stations. Inlet to lift station wet wells shall enter below the lowest water level of the pump operating range, and if necessary a drop inlet approach pipe external to the lift station may be used to avoid cascading influent flow.

## **MANHOLE DESIGN REQUIREMENTS**

Manholes are required at junctions of gravity sewers and at each change in pipe direction, size or slope, except as noted hereinafter for building connections. Manholes shall be installed at start of all main runs.

## **SPACING**

The distance between manholes must not exceed 120m (400 ft) in sewers of less than 460mm (18 in) in diameter. For sewers 460mm (18 in) and larger, and for outfalls from wastewater treatment facilities, a spacing of up to 180m (600 ft) is allowed provided the velocity is sufficient to prevent sedimentation of solids.

## **PIPE CONNECTIONS**

The crown of the outlet pipe from a manhole shall be on line with or below the crown of the inlet pipe.

## **FRAMES AND COVERS**

Frames and covers shall be cast iron, ductile iron or reinforced concrete, traffic rated in any case to an H-20 load rating. Cast iron frames and covers shall be traffic rated, circular with vent holes.

## **STEPS FOR MANHOLES**

Steps shall be cast iron, polyethylene coated, at least 15mm (5/8 in) thick, not less than 400mm (16 in) in width, spaced 300mm (12 in) on center.

## **PIPE**

Pipe shall conform to the respective specifications and other requirements as follows: Provide Polyvinyl Vinyl Chloride (PVC) conforming to ASTM D 3034, Type PSM with a maximum SDR of 35, size 380 mm (15inch) or less in diameter. PVC shall be certified as meeting the requirements of ASTM D 1784, cell Class 12454 B. Minimum pipe sizes for the main lines shall be 200mm (8 inch) diameter and service lines/laterals shall be a minimum of 100 mm (4 inch) diameter. Contractor may use uPVC or HDPE pipe provided the SDR and strength properties of the pipe equal or exceed the properties of ASTM D 1784 for PVC.



## **FITTINGS**

Fittings shall be compatible with pipe supplied and shall have a strength not less than that of the pipe. Fittings shall conform to the respective specifications and requirements as follows: provide PVC fittings conforming to ASTM D 3034 for type PSM pipe.

## **JOINTS**

Joints installation requirements shall comply with the manufacturers installation instructions. Flexible plastic pipe (PVC or high density polyethylene pipe) gasket joints shall conform to ASTM D3212.

## **BRANCH CONNECTIONS**

Branch connections shall be made by use of regular fittings or solvent-cemented saddles as approved. Saddles for PVC pipe shall conform to Table 4 of ASTM D 3034. The minimum depth of the cover over the pipe crown shall be 0.8m (2 ft 8").

## **BUILDING CONNECTIONS AND SERVICE LINES**

Building connections and service lines will be planned to eliminate as many bends as practical and provide convenience in rodding. Bends greater than 45 degrees made with one fitting should be avoided; combinations of elbows such as 45-45 or 30-60 degrees should be used with a cleanout provided. Connections to other sewers will be made directly to the pipe with standard fittings rather than through manholes. However, a manhole must be used if the connection is more than 31m from the building cleanout. Tee connections to the main or branch are not allowed. Service connection lines will be a minimum of 150 mm (6 inch) diameter and laid at a minimum 1% grade. Service laterals shall be sized and sloped per AED Design Requirements documents.

## **CLEANOUTS**

Cleanouts must be installed on all sewer-building connections to provide a means for inserting cleaning rods into the underground pipe. Install manufactured wye fittings. In lieu of a wye fitting, an inspection chamber may be installed. The inspection chamber shall be of the same construction as a manhole. Preferably the cleanout will be of the same diameter as the building sewer, and never be smaller than 150mm (6 in). Cleanouts shall be located within 1m from the building.

## **GREASE INTERCEPTORS**

When required in the drawings or task order, the Contractor shall provide grease interceptors. Grease interceptors are used to remove grease from wastewater to prevent it from entering the sanitary sewer and septic systems. All Dining Facilities (DFACs) shall incorporate preliminary treatment with use of a grease interceptor prior to the sanitary sewer system. The only waste lines upstream of the grease interceptor shall be grease laden waste from the kitchen or other areas. Grease interceptor design shall be based on AED Design Requirements - Grease Trap, latest version. The grease interceptor shall be of reinforced cast-in-place concrete, reinforced precast concrete or equivalent capacity commercially available steel, with removable three-section, 9.5 mm checker-plate cover, and shall be installed outside the building. Steel grease interceptors shall in be installed in a concrete pit and shall be epoxy-coated to resist corrosion as recommended by the manufacturer. Concrete shall have 21 MPa minimum compressive strength at 28 days. The grease interceptor shall connect to the sanitary sewer system.

Contractor shall provide bollards around the tank and construct a minimum 4 m wide access road from the closest roadway to the grease interceptor for a pump truck. The access road shall be of the same material as the main roads in the compound. Under no circumstance shall the grease interceptor be installed inside the building. Provide outside water spigot for cleaning.

## **FIELD QUALITY CONTROL**

### **FIELD TESTS AND INSPECTIONS**

The Contracting Officer will conduct field inspections and witness field tests specified in this section. The Contractor shall perform field tests and provide labor, equipment and incidentals required for testing.

Check each straight run of pipeline for gross deficiencies by holding a light in a manhole; it shall show a practically a full circle of light through the pipeline when viewed from the adjoining end of the line. When pressure piping is used in a non-pressure line for non-pressure use, test this piping as specified for non-pressure pipe.

Test lines for leakage by either infiltration tests or exfiltration tests. Prior to testing for leakage, backfill trench up to at least lower half of the pipe. When necessary to prevent pipeline movement during testing, place additional backfill around pipe to prevent movement during testing, but leaving joints uncovered to permit inspection. When leakage or pressure drop exceeds the allowable amount specified, make satisfactory correction and retest pipeline section in the same manner. Correct visible leaks regardless of leakage test results.

Infiltration tests and ex-filtration tests: Perform these tests for sewer lines made of specified material, not only concrete, in accordance with ASTM C 969M, ASTM C 969. Make calculations in accordance with the Appendix to ASTM C 969M and ASTM 969.

Low-pressure air tests: Perform tests as follows:

xxxxxx. Concrete pipe: Test in accordance with ASTM C 924M, ASTM C 924. Allowable pressure drop shall be given in ASTM C 924M ASTM C 924. Make calculations in accordance with the Appendix to ASTM C 924M, ASTM C 924;

yyyyyy. Ductile-iron pipe: Test in accordance with the applicable requirements of ASTM C 924M, ASTM C 924. Allowable pressure drop shall be as given in ASTM C 924M, ASTM C 924. Make calculations in accordance with the Appendix to ASTM C 924M, ASTM C 924;

zzzzzz. PVC Plastic pipe: Test in accordance with applicable requirements of UBPPA UNI-B-6. Allowable pressure drop shall be as given in UBPPA UNI-B-6. Make calculations in accordance with the Appendix to UBPPA UNI-B-6.

### **DEFLECTION TESTING**

Deflection testing will not be required however; field quality control shall ensure that all piping is installed in accordance with deflection requirements established by the manufacturer.

### **WASTEWATER TREATMENT SYSTEMS**

When required in the drawings or task order, the Contractor shall provide wastewater treatment facilities.

Permanent base waste water treatment plants shall be designed in accordance with Unified Facilities Guide Specifications UFGS 44 41 13, Prefabricated Biochemical Wastewater Treatment Plant, latest version.

Package wastewater treatment plants and lagoons shall be designed in accordance with AED Design Requirements - Package Wastewater Treatment Plants and Lagoons, latest version. Package WWTP or lagoon treatment systems may be considered for installation size greater than 300 effective design population.

Septic systems shall be designed and installed in accordance with AED Design Requirements - Sanitary Sewer and Septic Systems, latest version. Contractor shall provide a minimum 4 m wide access road to the septic tank. Bollards shall be installed around the absorption field as well as the septic tank. The access road shall be of the same thickness and material as the roadway on the compound. The access roadway shall tie to the nearest road network. Septic tank and leach field disposal systems shall be limited to effective design populations under 300 personnel. Multiple tanks shall be considered and designs shall be approved by AED when populations exceed 100 personnel.

Contractor shall not use sewage holding tanks for wastewater disposal system unless specifically required as the only method in the contract section 01010 or receiving the approval of the USACE-AED Engineering Branch, only for facilities with 60 personnel or less as considered on a case by case basis.

Medical waste water treatment shall be designed in accordance with UFC 4-51-01 Design: Medical Military Facilities. Contractor shall provide a medical waste incinerator for all regulate medical waste (RMW) as defined in the UFC. The facility shall be located on a reinforced concrete pad with minimum 2 m high chain link fence and gate per Section 1015.

### **SEWAGE HOLDING TANK(S)**

When required in the drawings or task order, the Contractor shall provide a sewage holding tank where shown on the drawings. Signage or other prevention methods (i.e. pipe bollards) shall be used to provide this protection. The finished grade for the site shall ensure that storm water runoff shall drain away from the site to prevent ponding, inflow, and infiltration. Once an appropriate site is located, the Contractor shall determine whether soil investigations for the site are available. If not, contractor shall perform investigations necessary to determine ground water levels, and soil conditions.

### **CONCRETE**

Reinforced concrete holding tanks are buried, watertight receptacles designed and constructed to receive wastewater. Liquid depth should be between 2 m and 3 m. The sewage holding tank(s) shall be designed to accommodate the total facility compound population as specified in the Scope of Work plus 25% and verified by the contractor. The tank shall be constructed of polyethylene or reinforced, cast-in-place concrete, with a minimum compressive strength of 21MPa at 28 days. Reinforced concrete tank(s) shall have a minimum earth backfill cover of 300mm. Access shall be provided at points of the tank by installing reinforced concrete risers, with steel access hatches, that will rise 50mm above the finished grade. Tank inlet elevation shall match piping feeding the tank.

### **POLYETHYLENE**

Polyethylene holding tanks are buried, watertight receptacles designed and constructed to receive wastewater. Liquid depth should be between 2 m and 3 m. The sewage holding tank(s) shall be designed to accommodate the total facility compound population as specified in the Scope of Work plus 25% and verified by the contractor. The tank shall be constructed of polyethylene. Polyethylene tank(s) shall have a minimum earth backfill cover of 1000mm and shall be strapped to a concrete anti-flotation slab to prevent flotation due to high groundwater levels. Size and dimensions of the slab shall be per the drawings. Access shall be provided at points of the tank by installing polyethylene risers, with bolt on polyethylene flanges. Hatches shall rise 50mm above the finished grade. Tank inlet elevation shall match piping feeding the tank.

### **WASTEWATER TREATMENT PLANT**

When required in the drawings or task order, the Contractor shall provide a wastewater treatment plant. The contractor shall coordinate with AED engineering personnel for design criteria, submittal requirements, and all other aspects of design and construction. Hydraulic Load shall be per quantity of wastewater. Influent wastewater shall be BOD5 – 400 mg/L or based on 0.09 kilograms (0.20 pounds) per person per day whichever is greater loading, TSS –400 mg/L, TKN – 80 mg/L, Fecal Coliform – 108 MPN /100 mL. Effluent Criteria Limitations for Direct Surface Water Discharge shall be BOD5 - 30 mg/L. TSS - 30 mg/L, pH values will be maintained between 6.0 and 9.0.

Processes: To be determined by the Contractor as part of the scope of work subject to Government approval as required in AED Design Requirements - Package Wastewater Treatment Plants and Lagoons latest version They shall include the generic components: preliminary treatment, primary treatment, secondary treatment, sludge digestion and disposal, effluent disposal including disinfection. A modular conex box shall be provided for the onsite laboratory.

## **SEPTIC SYSTEM**

When required in the drawings or task order, the Contractor shall provide a septic tank wastewater treatment system. The contractor shall provide a septic system per the AED Design Requirements Sanitary Sewer and Septic Systems, latest version. The septic tank location shall be per the drawings. The Contractor shall provide protection for the septic system by ensuring that vehicles, material storage, and future expansion shall be kept away from the area. Signage or other prevention methods (i.e. pipe bollards) shall be used to provide this protection. The finished grade for the site shall ensure that storm water runoff shall drain away from the site to prevent ponding, inflow, and infiltration. Once an appropriate site is located, the Contractor shall conduct soil investigations for the site to determine ground water levels, soil conditions, and the percolation rate. Septic systems shall be designed and installed in accordance with UFC 3-240-09A, Domestic Wastewater Treatment, 16 January 2004 edition, and the following guidance:

Percolation testing shall be performed per the AED Design Requirements. AED engineers shall review results of percolation testing to confirm suitability of the treatment system for the site.

Septic tank shall be a buried, watertight receptacle designed and constructed to receive and partially treat wastewater. The tank separate solids from the liquid, provides limited digestion of organic matter, stores solids, and allows the clarified liquid to discharge for further treatment and disposal. Settle able solids and partially decomposed sludge accumulate at the bottom of the tank, while scum rises to the top of the tank's liquid level. The partially clarified liquid is allowed to flow through an outlet opening position below the floating scum layer. The clarified liquid will be disposed of to the absorption field for further treatment and disposal.

## **ABSORPTION FIELD**

When required in the drawings or task order, the Contractor shall provide absorption fields (also termed "leach fields") to be used, in conjunction with septic tank treatment, as the final treatment and disposal process for the septic system. The contractor shall provide an absorption field per the AED Design Requirements Sanitary Sewer and Septic Systems, latest version. Absorption fields normally consist of perforated distribution pipe laid in trenches or beds that are filled with rock.

## **STORM SEWER SYSTEMS**

When required in the drawings or task order, the Contractor shall provide storm sewer systems. At a minimum, systems shall conform to the requirements of this section. The system shall consist of unlined swales, concrete trenches, culverts, headwalls and rock stabilization pads, or shall meet the existing drainage structures in type and material.

## **DESIGN**

### **STORM DESIGN BASIS (BASELINE FREQUENCY)**

Design shall be based on a rainfall of 10-year frequency. Basic system design shall be in accordance with UFC 3-230-17A, Chapter 2. Potential damage or operational requirements may warrant a more severe criterion or in certain areas a lesser criterion may be appropriate. The design of roadway culverts and other on-site storm drainage features & structures will normally be based on 10-year rainfall event. Protection of installations against flood flows originating from areas exterior to the base installation shall be based on a 25-year or greater rainfall depending on cost vs. benefit considerations.

### **STORM DRAINAGE SYSTEM DESIGN**

Drainage of runoff from turf areas onto pavements shall be minimized. If storm drain piping is required it shall comply with the requirements in this section. Where storm drain pipes are of different diameters, the pipe crown elevations should be matched at the drainage structure. Storm drain lines shall be located outside of paved areas to the extent possible. Under no circumstance shall storm drain lines be located beneath buildings. Erosion control shall be provided for all storm drain structures during construction. Water from roof down spouts shall be drained off building site. All storm drain pipe and structures shall comply with the requirements specified in Section 33 40 01 STORM-DRAINAGE.

## **HYDRAULIC DESIGN**

New storm drain pipes shall be designed for gravity flow during the design storm baseline unless otherwise approved by the Government. The hydraulic grade line shall be calculated for the storm drain system and all energy losses accounted for. Design computations shall adhere to procedures contained in UFC 3-230-17A. Storm drain systems shall be designed to provide a minimum flow velocity of .75 meters per second when the drains are one-third or more full.

### **AREA INLETS**

Area inlets shall be properly sized and designed to accommodate the design flows. All grates shall be of a “bicycle safe” design.

### **CONCRETE PIPE**

Reinforced concrete pipe shall be a minimum Class III. Type I cement may be used only when sulfates in the soil are 0.1 percent or less and dissolved sulfates in the effluent are 150 ppm or less. Type II cement may be used only when sulfates in the soil are 0.2 percent or less and dissolved sulfates in the effluent are 1,500 ppm or less. Only Type V cement may be used if sulfates in the soil exceed 0.2 percent or dissolved sulfates in the effluent exceed 1,500 ppm. Concrete pipe shall be assumed to have a minimum design service life of 50 years unless the Contractor determines that conditions at the site will reduce the service life. Concrete culverts and storm drains shall be protected by a minimum of 1 meter of cover during construction to prevent damage by heavy construction equipment.

### **PLASTIC PIPE**

Stiffness of the plastic pipe and soil envelope shall be such that the predicted long-term deflection shall not exceed 7.5 percent. Plastic culverts and storm drains shall be protected by a minimum of 1 meter of cover during construction to prevent damage by heavy construction equipment. Split couplers shall not be allowed for corrugated high-density polyethylene pipe. Plastic pipe shall be assumed to have a minimum design service life of 50 years unless the Contractor determines that conditions at the site will reduce the service life (then plastic pipe shall not be used).

### **UNLINED SWALES**

When required in the drawings or task order, the Contractor shall provide unlined swales to collect stormwater runoff and divert storm water flows away from areas subject to flooding due to the design storm. Swales shall be constructed of engineered materials where natural soils are not adequate. Swales shall maintain positive slopes and shall be engineered to minimize scour. Swales shall be trapezoidal in shape and have maximum side slopes of 3 horizontal to 1 vertical. Depth and slope of swales shall be determined based on hydraulic calculations per AED Design Requirements. To minimize ponding and silting accumulation, a grade of at least 0.3% should be provided for all ditches. Grades in the range of 0.4% to 0.6% are usually more desirable. There is no upper limit on ditch gradients; however, the steeper the grade, the greater the expense may be for erosion control requirements.

### **CONCRETE TRENCHES OR SWALES**

When required in the drawings or task order, the Contractor shall provide concrete lined or precast concrete swales to collect stormwater runoff and divert storm water flows away from areas subject to flooding due to the design storm. Swales shall maintain positive slopes and shall be engineered to minimize scour. Swales shall have maximum side slopes of 3 horizontal to 1 vertical. Depth and slope of swales shall be as shown on the drawings. Thickness of concrete shall be a minimum of 100mm (4in). Slopes shall be based on hydraulic calculations per AED Design Requirements.

### **CULVERTS AND HEADWALLS**

Culverts shall be provided where shown on drawings. Culvert piping shall be concrete pipe with slopes and protection from vehicle loads per the drawings. Provide a minimum cover of 150mm (6”) between the top of the

pipe and the bottom of the pavement sub base. Entrance and exit structures (headwalls) shall be provided where shown. Headwalls may be precast structures or cast in place concrete meeting the requirements of MRRD. Entrance and exit flow effects shall be minimized by using Rip Rap beds of sized per the drawings to prevent scour and wash out.

## **DRAINAGE BOX**

## **ROCK STABILIZATION PADS (RIP RAP)**

Riprap protection shall be placed where shown. Rip rap shall be provided adjacent to all hydraulic structures placed in erosive materials to prevent scour at the ends of the structure. Size of stone, depth of stone and length of blanket shall be provided per the drawings and in accordance with UFC 3-230-17FA.

## **OIL WATER SEPARATORS (OWS)**

When required in the drawings or task order, the Contractor shall provide oil/water separators where shown. Dimensions shall be per the drawings. Oil water separators shall be watertight structures designed in accordance with AED Design Guide, Oil Water Separators and UFC 3-240-07FA, latest edition. Oil water separators may be either concrete or plastic. Separators shall have access manholes providing access to the solids collection end and the effluent end. Concrete OWSs shall have hinged access covers. Plastic OWSs shall have bolt on flanges. Minimum diameter shall be 24". Separators shall be installed as close as possible from the drain location. Storm and sanitary sewers shall not be mixed with oily wastes before entering the OWS.

## **CONCRETE PADS**

Provide as shown on the drawings. The contractor shall construct a concrete pad at the location shown on the drawings. Cast-in-place concrete shall have a 21 MPa minimum compressive strength at 28 days. Concrete pad shall be either reinforced in earthquake zones or non-reinforced as specified on the drawing. A minimum clear cover of 75mm shall be maintained to all reinforcement bars. A minimum of 200mm crushed stone sub base shall be provided beneath both reinforced and non-reinforced pads. A minimum slope of 2% shall be maintained to prevent ponding.

## **GEOTECHNICAL**

### **SOIL INVESTIGATION**

Existing geotechnical information is not available at the project site. Any site-specific geotechnical data required to develop foundations, materials, earthwork, and other geotechnical related design and construction activities for this project shall be the Contractor's responsibility. The Contractor shall develop all pertinent geotechnical design and construction parameters by appropriate field and laboratory investigations and analyses. The Contractor shall produce a detailed geotechnical report containing field exploration and testing results, laboratory testing results (particle sizes and distribution, liquid and plastic limit test, and moisture and density test, etc.). Information in the report shall include, but not limited to: existing geotechnical (e.g. surface and subsurface) conditions, location of subsurface exploration logs on site plan, exploration point, allowable soil bearing capacity and foundations recommendations, bearing capacity, pavement design criteria (e.g. CBR values, K values), ground-water levels, and construction materials (e.g. concrete cement, asphalt, and aggregates). For standard penetration test (SPT), the Contractor shall use ASTM D1586. All geotechnical laboratory and field work shall be based on standards set forth in the ASTM. Contractor shall not use any DIN standards for penetration tests in lieu of ASTM D 1586. Soil investigations shall conform to AED Design Requirements: Geotechnical Investigations for USACE Projects, latest version, or most recent version.

For foundation design, allowable soil bearing pressures shall be based on the International Building Code (IBC) 2006 Table 1804.2. The contractor shall conduct soils classification per ASTM D 2487-06. There shall be no variation from the values listed in the table above, unless the soils investigation indicates lower allowable values should be used.

The contractor shall submit a geotechnical investigation plan prior to commencing any field investigation to the USACE-AED Engineering Branch through the COR for review and approval. Once the plan is reviewed and approved, the Contractor can start the field investigation. The Geotechnical report shall be submitted with all the design review submittals as specified in the 01335. No design review submittal shall be considered complete without an approved geotechnical report. Geotechnical investigation plans and report of investigations shall be submitted promptly in accordance with Section 01335.

## **GEOTECHNICAL QUALIFICATIONS**

A geotechnical engineer or geotechnical firm responsible to the Contractor shall develop all geotechnical engineering design parameters. The geotechnical engineer or geotechnical firm shall be qualified by: education in geotechnical engineering; professional registration; and a minimum of ten (10) years of experience in geotechnical engineering design. The geotechnical firm conducting either the field investigation or laboratory work shall be certified by the Chief, Quality Assurance Branch USACE-AED. Certification document shall be submitted as part of the Geotechnical Report.

## **STRUCTURAL**

### **GENERAL**

The project consists of various structures. The new buildings shall be provided with a reinforced concrete foundation that is properly placed on suitable compacted ground area and shall be in accordance with the recommendations from the geotechnical investigation. The reinforced concrete foundation shall be designed by the Contractor. Building foundations shall be founded a minimum of 800 mm below grade.

The new buildings foundations were designed for a soil bearing capacity of  $0.75\text{kg/cm}^2$ . The geotechnical investigation shall confirm bearing capacity to be no less than  $0.75\text{kg/cm}^2$ . If geotechnical investigation shows less than  $0.75\text{kg/cm}^2$ , Contractor shall redesign footings based on the geotechnical investigation. Foundation design shall be corroborated with the geotechnical findings and recommendations.

Brick shall not be used as a construction material for the new buildings.

### **DESIGN**

Designs including but not limited to the wood stove kitchen enclosure, generator sunshade, guard shack, guard house, guard tower, perimeter wall access gates, perimeter wall, bunkers, roof trusses, and all other building structures shall be performed and design documents signed by a registered professional architect and/or engineer. Design shall be performed and design documents signed by a registered professional architect and/or engineer. Calculations shall be in SI (metric) units of measurements. All components of the structures shall be designed and constructed to support safely all loads without exceeding the allowable stress for the materials of construction in the structural members and connections. All building exterior walls shall be constructed with reinforced CMU or reinforced concrete unless otherwise stated in Sections 01010 or 01015.

## **STANDARDS**

The Contractor should use the following American standards to provide sound structural design if local standards are not available, relevant, or applicable. The Contractor shall follow American Concrete Institute Standards (ACI) for design and installation of all concrete structures. All codes are latest edition.

Concrete	ASTM C 39 and ACI 318; 28 MPa ( $f'_c = 4,000\text{psi}$ ) minimum specified compressive strength @ 28 days, and maximum water-cement ratio of 0.45.
Steel Reinforcement	ASTM A 615; 420 MPa ( $F_y = 60\text{ksi}$ ) yield strength.

Welded Wire Fabric	ASTM A 185.
Anchor Bolts	ASTM A 36.
Bolts and Studs	ASTM A 325.
Plaster	ASTM C 926; 14 MPa ( $f'_c = 2,000\text{psi}$ ).
Concrete Masonry Units	ASTM C 90; Type I (normal weight, moisture control).
Mortar	ASTM C 270; Type S (Ultimate compressive strength of 13 MPa) Proportion: 1 part cement, 0-1/2 part lime and 4-1/2 parts aggregate.
Grout	ASTM C 476; 14 MPa (2,000psi) minimum compressive strength @ 28 days (Slump between 200 mm to 250mm).
CMU Joint Reinforcement	Standard 9 gauge minimum, Ladder Type.
Structural Steel	ASTM A 36; 250 MPa ( $F_y = 36,000\text{psi}$ ).
Shaped Structural Tubing	ASTM A 500, Grade B; 315 MPa ( $F_y = 46,000\text{psi}$ ).
Welding	AWS D1.1 (American Welding Society).

## **DEAD AND LIVE LOADS**

Dead loads consist of the weight of all materials of construction incorporated in the buildings. Live loads used for design shall be in accordance with the Structural Load Data, UFC-3-310-01, and edition as referenced herein.

## **WIND LOADS**

Wind loads shall be calculated using a "3-second gust" wind speed of 135 km/hr.

## **SEISMIC**

The building and all parts thereof shall be designed for the seismic requirements as defined by the International Building Code referenced herein.

Spectral ordinates shall be  $S_s = 1.65g$  and  $S_1 = 0.75g$ .

## **STRUCTURAL CONCRETE**

Concrete structural elements shall be designed and constructed in accordance with the provisions of the American Concrete Institute, Building Code Requirements for Structural Concrete, ACI 318, latest edition. A minimum cylinder 28 day compressive strength of 28 MPa (4,000 psi) shall be used for design and construction of all concrete. Reinforcing steel shall be deformed bars conforming to American Society for Testing and Materials publication ASTM A 615, Deformed and Plain Billet-Steel Bars for Concrete Reinforcement. Concrete shall have maximum water-cement ratio of 0.45. No concrete shall be placed when the ambient air temperature exceeds 32 degrees C (90 degrees F) unless an appropriate chemical retardant is used. In all cases when concrete is placed at 32 degrees C (90 degrees F) or hotter it shall be covered and kept continuously wet for a minimum of 48 hours. Concrete members at or below grade shall have a minimum concrete cover over reinforcement of 75 mm (3 inches).

## **MASONRY**

Masonry shall be designed and constructed in accordance with the provisions of Building Code Requirements for Masonry Structures, ACI 530/ASCE 5/TMS 402, latest editions. Mortar shall be Type S and conform to ASTM C 270. Masonry shall not be used below grade. All cells of exterior reinforced CMU walls shall be fully grouted. For interior CMU walls, only the reinforced cells need to be grouted. All CMU walls shall have reinforced horizontal bond beams at a maximum spacing of 1,200 mm on center.



## **STRUCTURAL STEEL**

Structural steel shall be designed and constructed in accordance with the provisions of American Institute of Steel Construction (AISC), Specifications for Structural Steel Buildings (latest edition). Design of cold-formed steel structural members shall be in accordance with the provisions of American Iron and Steel Institute (AISI), Specifications for Design of Cold-Formed Steel Structural Members.

## **STEEL ROOF JOISTS**

Steel roof joists shall be placed according to the roof design and roof manufacturer specifications. Steel purlins shall be installed perpendicular to the steel beams. Use continuous metal roof sheets from ridge to eave to avoid constructing roof seams. In lieu of the continuous metal roof sheets, the Contractor can submit a plan for roofing seams; however, the plan must show a detail of how leaks will be avoided, and the Contracting Officer before application must approve the plan. Steel "hat channels" can be installed for the connection to the conex box module. Provide all necessary metal framing for roof fascia and soffits.

## **OPEN WEB STEEL JOISTS**

Open web steel joists shall conform to SJI Specifications and Tables. Joists shall be designed to support the loads given in the standard load tables of SJI Specifications and Tables.

## **METAL DECK**

Deck units shall conform to SDI Publication Number 29. Panels of maximum possible lengths shall be used to minimize end laps. Deck units shall be fabricated in lengths to span three or more supports with flush, telescoped or nested 50 mm (2 inch) laps at ends, and interlocking, or nested side laps. Metal deck units shall be fabricated of steel thickness required by the design and shall be galvanized.

## **FOUNDATIONS**

Foundations shall be in accordance with the Geotechnical requirements of this RFP.

## **EARTHWORK AND FOUNDATION PREPARATION**

### **CAPILLARY WATER BARRIER**

ASTM C 33 fine aggregate grading with a maximum of 3 percent by weight passing ASTM D 1140, 75 micrometers, No. 200 sieve, or 37.5mm and no more than 2 percent by weight passing the 4.75mm No. 4 size sieve and conforming to the soil quality requirements specified in the paragraph entitled "Satisfactory Materials."

### **SATISFACTORY MATERIALS**

Any materials classified by ASTM D 2487 as GW, GW-GM, GW-GC, SW, SW-SM, or SW-SC and free of debris, roots, wood, scrap material, vegetation, refuse, soft unsound particles, or objectionable materials. Unless specified otherwise, the maximum particle diameter shall be one-half the lift thickness at the intended location.

### **UNSATISFACTORY MATERIALS**

Any materials which do not comply with the requirements set forth in the Satisfactory Materials paragraph. Unsatisfactory materials also include man-made fills, trash, refuse, or backfills from previous construction. Unsatisfactory material also includes material classified as satisfactory which contains root and other organic matter, frozen material, and stones larger than 75mm. The Contracting Officer shall be notified of any unsatisfactory materials.

## **CLEARING AND GRUBBING**

Unless indicated otherwise, remove tress, stumps, logs, shrubs, brush and vegetation, and other items that would interfere with construction operations within lines 1.5 meters outside of the building and structure line. Remove stumps entirely. Grub out matted roots and roots over 50mm in diameter to at least 460mm below existing surface.

## **STRIPPING**

Strip suitable soil from the site where excavation or grading is indicated and stockpile separately from other excavated material. Material unsuitable for use as topsoil shall be stockpiled and used for backfilling. Locate topsoil so that the material can be used readily for the finished grading. Where sufficient existing topsoil conforming to the material requirements is not available on site, provide borrow materials suitable for use as topsoil. Protect topsoil and keep in segregated piles until needed.

## **EXCAVATION AND COMPACTION OF FILL**

Excavate to contours, elevation, and dimensions indicated. Reuse excavated materials that meet the specified requirements for the material type required at the intended location. Keep excavations free from water. Excavate soil disturbed or weakened by Contractor's operations, soils softened or made unsuitable for subsequent construction due to exposure to weather. Excavations below indicated depths will not be permitted except to remove unsatisfactory material. Unsatisfactory material encountered below the grades shown shall be removed as directed. Refill with satisfactory material and compact to at least 95 percent of the maximum dry density, as determined by the Modified Proctor laboratory procedure. ASTM D 1557 shall be used for producing the Modified Proctor moisture-density curve, unless the soil to be compacted includes more than 30% retained on the 19 mm (3/4") sieve. In this case, the Contractor must replace the ASTM D 1557 laboratory compaction procedure with AASHTO T 180, Method D, corrected with AASHTO T 224.

During compaction, the moisture content of the soil shall be within 1.5 percent of the optimum moisture content, as determined by the Modified Proctor laboratory procedure. The thickness of compacted lifts shall not exceed 15 cm and the dry density of each compacted lift shall be tested by either sand cone (ASTM D 1556) or nuclear gage (ASTM D 2292). If the nuclear gage is used, it must first be compared to sand cone tests for each soil type to verify the accuracy of the nuclear gage measurements for moisture content, wet density, and dry density. Furthermore, every tenth nuclear gage test must be accompanied by a sand cone test and these verification data must be summarized and submitted to the Contracting Officer. Density tests shall be performed at a frequency of not less than one test for each 200 square meters and not less than two tests per compacted lift.

## **STRUCTURES WITH SPREAD FOOTINGS**

Ensure that footing subgrades have been inspected and approved by the Contracting Officer prior to concrete placement. Fill over excavations with concrete during foundation placement.

## **ARCHITECTURAL REQUIREMENTS**

### **GENERAL**

All material approved shall become standardized material to be used throughout the facilities under contract. Different sub-contractors shall not use different material or standards under the contract. Intent of the project is to use locally procured materials (unless specified otherwise) and labor to the maximum extent possible while satisfying seismic, international building code, and national fire protection agency life safety code. Conflicts between criteria shall be brought to the attention of the Contracting Officer for resolution. In such instances, the Contractor shall furnish all available information with justification to the Contracting Officer.

## **DESIGN CRITERIA**

Schematic designs for the facility types requested in this proposal are provided in Appendix A. These designs shall be used to create a complete and usable facility meeting the minimum requirements stated in these documents. The Codes, Standards, and Regulations listed in these documents shall be used in the construction of this project. The publications shall be the most recent editions. Standards other than those mentioned may be accepted provided they meet the minimum requirements and the contractor shall submit proof of equivalency to the Contracting Officer for approval.

IBC - International Building Code, latest edition

NFPA 101 - Life Safety Code, latest edition

## **LIFE SAFETY/ FIRE PROTECTION/ HANDICAPPED ACCESSIBILITY**

A life safety and fire protection analysis shall be completed prior to construction commencement. This analysis shall be documented in plans and in the design analysis. All spaces shall be classified following NFPA 101 or IBC. Whichever code is used shall be stated and referenced in the life safety plan. The facility shall comply with all other safety requirements of the NFPA 101. To the extent possible, all facilities shall be designed in accordance with recognized industry standards for life safety and building egress. An adequate fire alarm system, fire extinguishers, and smoke alarms shall all be included as required.

## **ANTITERRORISM / FORCE PROTECTION**

Force protection/anti-terrorism measures for this location shall be followed and incorporated into this project as indicated, in accordance with the referenced DoD Regulations. Information regarding force protection may be found herein and at the following link: [www.tisp.org](http://www.tisp.org). UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings, including change 1, 22 January 2007; is the primary DoD AT/FP regulation for projects.

## **CONCRETE**

### **FINISH**

Horizontal finish shall be troweled or screed. If finish is exposed concrete, then the floor shall be a broom finish for texture and shall not interfere with sloping for drainage of the surface. Vertical work shall have a form finish. Exposed concrete shall be sealed with an approved sealer.

### **INSULATED CONCRETE SANDWICH WALL SYSTEM (3-D BUILDING SYSTEM)**

As an option to standard masonry construction, the Contractor may construct walls of single story buildings using an insulated concrete sandwich wall system. The insulated concrete sandwich wall system shall be field fabricated and composed of a 76 mm (3 inch) expanded polystyrene core that spans in a single piece from floor elevation to top of wall elevation. The polystyrene core shall have a welded wire fabric, 50 mm x 50 mm (2 inch x 2 inch) mesh, 2.52 mm (12.5 gauge) wire, attached to both faces of the polystyrene core. The welded wire mesh shall be installed at 13 mm from the face of the polystyrene core. The welded wire mesh on each face shall be attached to each other and the polystyrene core with diagonal truss wires. Apply sprayed concrete (shotcrete) to a minimum thickness of 45 mm (1-3/4 inch) or as structural calculations require, whichever is greater. Method of placing the shotcrete shall be in conformance with ACI 506R-85. Concrete finishing shall be done by appropriate hand tools (darby, trowel, etc.) to provide the desired finish effect.

### **PRECAST**

Storage of precast units shall be in a dry place or materials shall be covered with a plastic or protective layer. Units shall be detailed to provide size, shape and location of installation. Precast units shall meet the minimum concrete strength requirements.

## **MASONRY**

Storage of masonry materials shall be in a dry place or materials shall be covered with a plastic protective layer. Cover open walls each day to keep them protected and dry. Masonry construction systems shall be reinforced.

### **CONCRETE MASONRY UNITS**

Concrete masonry units (CMU) for exterior walls shall be either 190 mm or 290 mm wide x 390 mm x 190 mm high as shown on drawings. They shall be installed in running bond level and plumb. Mortar joints shall be 10 mm on all sides between CMU. Joints shall be struck with a concave tool to provide a smooth recessed curved surface. Install only quality units. The surface shall be free of chips, cracks, or other imperfections that would detract from the overall appearance of the finished wall. Defective CMU or mortar shall be rejected.

## **STONE**

Stone type shall be identified for approval in design. Mortar shall be of lower strength than stone and weep holes shall be provided in cavity wall systems.

### **THERMAL PERFORMANCE OF EXTERNAL BUILDING ASSEMBLIES**

External building assemblies shall meet the requirements of TI-800, Design Criteria, UFC 3-400-01 Design: Energy Conservation, and ASHRAE Standard 90.1, latest editions, but shall meet the following minimum requirements:

Assembly	Minimum Thermal Value
Exterior walls (above grade)	RSI 2.280 (R 13)
Ceilings/roof	RSI 5.284 (R 30)
Floor (over unheated space)	RSI 3.346 (R 19)
Exterior doors	RSI 0.252 (R 1.43)
Exterior windows/(glazing within doors)	RSI 0.308(R 1.75)
Skylights	RSI 0.180 (R 1.02)

This table is a summary of ANSI/ ASHRAE 90.1 Table 5.5-5, Climate Zone 5 (A,B,C)

RSI measured in K-m<sup>2</sup>/W, R measured in SF-F-hr/BTU. 1 K-m<sup>2</sup>/W = 5.678 SF-F-hr/BTU.

The building design shall utilize solar heating by orientating the buildings and wind breaks, insulation and exterior window shading techniques to reduce building heat loss and heat gain. Contractors shall include energy efficient heating and cooling solutions to minimize energy consumption.

## **CARPENTRY**

The use of wood framing as indicated below is acceptable only where allowed by IBC and NFPA 101.

### **WOOD PURLINS**

If Contractor chooses to utilize wood purlins, provide and install roof purlins of natural wood, locally available material 1 meter on center securely wedged between steel H structural joists. Tightly fit 25mm or 30 mm boards over roof structure and nail into wood purlins. New roofing shall extend a minimum of 600 mm past the exterior surface of the wall.

### **WOOD BATTENS**

If Contractor chooses to utilize wood ceiling batten strips, wood ceiling batten strips, 20 mm x 60 mm, shall be nailed to the bottom of the wood purlins. Battens shall be spaced at 400 mm on center (or per UBC requirements if sheetrock is substituted for plaster). This is for the support of a plaster ceiling.

## **ROOFING AND WEATHERPROOFING**

All exterior entry ways to be covered and protected by rain gutters and diverters as to not have water falling on the entry ways to all buildings.

### **SLOPED ROOFS**

A sloping roof shall be as defined in the IBC. On sloping roofs provide and install 0.60 mm (24 gauge) galvanized steel in either corrugated or standing seam design. Use 0.75 mm (22 gauge) for pre-denotation roof issues which should be augmented with sand bags in the ceiling below the metal roofing. Metal roofing shall be anchored to the steel "Z" purlins or wood deck sub-surface using exposed fasteners at 300 mm on center at all seams and at 600 mm on center in the panel field. Wood deck sub-surface shall either be solid wood boards or plywood. Fasteners shall be placed at the top of the corrugation taking care not to dent panel. Roof sealant or adhesive shall be placed over each anchor head. Roofing system shall include all edge, ridge and penetration flashings necessary for a watertight installation and as described in this section. Roofing shall be galvanized mil finish. Panels shall be overlapped two corrugations side to side and be continuous sheets from ridge to eave. Provide continuous ridge vents on all gable roofs.

### **LOW SLOPE ROOFS**

A low slopping roof shall be as defined in the IBC. Provide and install 3 ply built up roofing over concrete deck. Contractor may propose to the Contracting Officer an alternate roofing system with justification for consideration and alternate pricing. Concrete roof deck shall slope 21 mm per m.

### **BUILT-UP ROOFING SYSTEM**

An Insulated-Deck, Coal Tar, Glass-Fiber, Aggregate Roofing (ICGA-BUR): Provide built-up, aggregate-surfaced roof system with coal tar bitumen and glass-fiber ply felts (roof manufacturer's separation layers) for layup as indicated.

### **INSULATION**

Provide a 50 mm (2 inch) thick extruded polystyrene rigid thermal insulation boards, conforming DIN, EN 13164 BS, EN 13164,  $k=0.2$  @ 75 degrees F mean temperature, 2.82 kg/sq cm (40 lbs/sq in) compressive strength, hydrophobic, Type VI. Provide thickness by multiple boards to meet the designed R-value.

### **INSULATION INSTALLATION**

Comply with insulation manufacturer's instructions and recommendations for handling, installing, and bonding or anchoring insulation to substrate. Insulation boards shall be installed loose, without glue, in staggered manner. Attention should be paid not to leave separation along edges. Where overall insulation thickness is 50 mm (2 inches) or greater, install required thickness in two layers with joints of second layer offset from joints of first layer a minimum of 300 mm (12 inches) each direction. Trim surface of insulation where necessary at roof drains so completed surface is flush with drain ring. Polyester felt or geotextile shall be installed over insulation layers as a filter layer to prevent the passage of fines in gravel layer to lower strata.

### **PRIMER**

ASTM D 41 primer as recommended by roofing manufacturer.

### **COAL TAR BITUMEN**

ASTM D 450, Type III, as an option to asphalt.

### **BITUMEN MEMBRANE**

aaaaaaa. ASTM D312 or the equivalent EN 1849-1 for thickness and unit weight,

bbbbbb. ASTM D312 or the equivalent EN-1426 for penetration,

cccccc. ASTM D312 or the equivalent EN-1427 for softening point

dddddd. ASTM D312 or the equivalent TS 11758-1 for flash point or heat stability

eeeeee. ASTM D4601 or the equivalent TS 11758-1 for width and area of roll

ffffff. ASTM D4601 (moisture percentage) or the equivalent EN 1928 (water tightness)

gggggg. ASTM D226 (pliability) or the equivalent EN 1109 (cold bending).

## **GLASS ROOFING FELT**

ASTM D 2178, Type IV or VI, except felts for coal tar systems shall be impregnated with a bituminous resin coating which is compatible with coal tar bitumen.

## **ORGANIC FELT BASE**

hhhhhh. ASTM D 2626 for use with asphalt roofing system.

iiiiii. ASTM D 226 for use with asphalt roofing system and ASTM D 227 for use with coal tar roofing system. Organic felts may be used for bitumen stops and edge envelopes.

## **ROOF MEMBRANE INSTALLATION**

jjjjjj. Prime surface of concrete deck with asphalt primer per manufacturers recommended application rate.

kkkkkk. Cant Strips/Tapered-Edge Strips: Wood, not less than 90 mm (3-1/2 inches) high, 45-degree insulation cant strips at juncture of membrane with vertical surface. Provide tapered-edge strips at perimeter edges of roof that do not terminate at vertical surfaces.

llllll. Base Layer: Install one lapped course of base sheet. Attach first layer of roofing membrane material to substrates and elsewhere as indicated. Mop to non-nailable substrate with hot bitumen or apply with torch method per manufacturer's specifications

mmmmmm. Second Layer: Install second layer of roofing membrane material over the first course staggering joints and seams in both directions by at least 300 mm. Mop top layer of membrane to base layer, or attach via torch method per manufacturer's specifications.

## **COMPOSITION FLASHING AND STRIPPING**

nnnnnn. Install composition flashing at cant strips, at other sloping and vertical surfaces, at roof edges, and at penetrations through roof. Install composition flashing in accordance with membrane manufacturers specifications. Nail or provide other forms of mechanical anchorage of composition flashing to vertical surfaces as recommended by manufacturer of primary roofing materials.

oooooo. Install composition stripping where metal flanges are set on roofing. Provide not less than two plies of woven glass-fiber fabric, each set in a continuous coating of roofing cement and extended onto the deck 100 mm to 150 mm (4 inches and 6 inches), respectively. Except where concealed by aggregate surfacing or elastic flashing, apply a heavy coating of roofing cement over composition stripping.

pppppp. Roof Drains: Fill clamping ring base with a heavy coating of roofing cement. Set built up roofing membrane in to the clamping ring base and fix the drain top on it.

qqqqqq. Allow for expansion of running metal flashing and edge trim that adjoins roofing. Do not seal or bond built-up roof membrane or composition flashing and stripping to metal flanges that are over 914 mm (3 feet) in length.

rrrrrr. Counterflashings: cap flashings, expansion joints, counterflashings, and similar work to be coordinated with built-up roofing work, are specified in other sections of these specifications.

ssssss. Roof Accessories: Miscellaneous sheet metal accessory items, including insulation vents and other devices and major items of roof accessories to be coordinated with built-up roofing work.

## **GRAVEL LAYER**

A gravel layer of 16 to 32 mm diameter stone will be laid at least 50 mm thick on top of the filter layer in non-trafficable flat roofs. The gravel layer will be applied as soon as possible to prevent UV damage and/or wind damage to insulation and filter layers. Connections and Jointing

## **CONNECTIONS AND JOINTING**

### **SOLDERING**

Soldering shall apply to copper and stainless steel items. Edges of sheet metal shall be pre-tinned before soldering is begun. Soldering shall be done slowly with well heated soldering irons so as to thoroughly heat the seams and completely sweat the solder through the full width of the seam. Edges of stainless steel to be pre-tinned shall be treated with soldering acid flux. Soldering shall follow immediately after application of the flux. Upon completion of soldering, the acid flux residue shall be thoroughly cleaned from the sheet metal with a water solution of washing soda and rinsed with clean water.

### **SEAMING**

Flat-lock and soldered-lap seams shall finish not less than 25 mm. wide. Unsoldered plain-lap seams shall lap not less than 75 mm. unless otherwise specified. Flat seams shall be made in the direction of the flow.

### **CLEATS**

A continuous cleat shall be provided where indicated or specified to secure loose edges of the sheet metalwork. Butt joints of cleats shall be spaced approximately 3 mm. apart. The cleat shall be fastened to supporting wood construction with nails evenly spaced not over 300 mm. on centers. Where the fastening is to be made to concrete or masonry, screws shall be used and shall be driven in expansion shields set in concrete or masonry.

## **METAL**

### **STEEL HANDRAILS**

Steel handrails shall be steel pipe conforming to ASTM A 53/A 53M, and shall have a nominal diameter of 50 mm. Handrails shall be designed to resist a concentrated load of 490 N in any direction at any point on the top of the rail or 290 N applied horizontally to the top of the rail, whichever is more severe. Installation of handrails shall be with expansion shields and bolts into masonry and/or concrete and full length welds of metal posts to stair stringers. Railings shall be hot dipped galvanized [and shop painted]. Pipe collars of the same material and finish as the handrail shall be provided.

### **METAL STAIRS**

Provide galvanized steel [ship] stair stringers and treads. [Ship stairs are a steeper stair used for utility purposes only.] Treads shall be [concrete pan, checkered plate steel, grated galvanized steel] along with welds or fasteners. Stairs shall be designed and constructed to support live load of not less than 500 kg (100 psf) per square meter and a concentrated load of 1.3 kN (300lbs).

## **MATERIALS**

Any metal listed by ASTM, DIN, BS or EN standards. Manual for a particular item may be used, unless otherwise specified or indicated. Materials shall conform to the requirements specified below and to the thicknesses and configurations established in ASTM, DIN, BS or EN standards. Different items need not be of the same metal, except that if copper is selected for any exposed item, all exposed items shall be copper.

### **STEEL SHEET, ZINC-COATED (GALVANIZED)**

Zinc coated steel conforming to ASTM A 525, DIN BS or EN Standards.

### **ALUMINUM WALL CAPPING**

Aluminum wall capping shall conform to ASTM B 209 M, DIN 18339, BS or EN Standards.

## **FLASHING**

Flashing shall be installed at locations indicated and as specified below. Sealing shall be according to the flashing manufacturer's recommendations. Flashings shall be installed at intersections of roof with vertical surfaces and at projections through roof, except that flashing for heating and plumbing, including piping, roof and floor drains, and for electrical conduit projections through roof or walls are specified in other sections. Except as otherwise indicated, counter flashings shall be provided over base flashings. Perforations in flashings made by masonry anchors shall be installed on top of joint reinforcement. Lashing shall be formed to direct water to the outside of the system.

### **THROUGH-WALL FLASHING**

Through-wall flashing includes sill, lintel, and spandrel flashing. The flashing shall be laid with a layer of mortar above and below the flashing so that the total thickness of the two layers of the mortar and flashing are the same thickness as the regular mortar joints. Flashing shall not extend further in to the masonry backup wall than the first mortar joint. Joints in flashing shall be lapped and sealed. Flashing shall be one piece for lintels and sills.

### **LINTEL FLASHING**

Lintel flashing shall extend the full length of lintel. Flashing shall extend through the wall one masonry course above the lintels and shall be bent down over the vertical leg of the outer steel lintel angle not less than 50 mm, or shall be applied over top of masonry and pre-cast concrete lintels. Bed joints of lintels at joints shall be under laid with sheet metal bond breaker.

### **VALLEY FLASHING**

Valley flashing shall be provided at intersections of roofs where a valley is formed. Flashing shall be a minimum of 500 mm centered on the valley (extending each direction a minimum of 250 mm). Valley flashing shall have a small ridge in the center to allow for expansion and contraction. Material shall be stainless steel, galvanized or match finished roofing metal.

### **SILL FLASHING**

Sill flashing shall extend the full width of the sill and not less than 100 mm beyond ends of sill except at joint where the flashing shall be terminated at the end of the sill.

### **METAL FASCIA & SOFFIT**

No wood fascias and/or soffits are allowed. Use metal fascias and soffits throughout. Extend roof decking out over fascia a minimum of 20 mm. Provide a 40 mm drip flashing over edge of roof decking so that it extends past bottom of decking on all sides of the building. Soffits shall be a minimum width of 600mm extending from the building wall.



## **CONTINUOUS SOFFIT VENT**

Enclose soffits and return to vertical wall. Provide continuous soffit venting of all overhangs on the underside of the soffit. The opening shall be no larger than 100 mm and set in a minimum of 50 mm from the exterior fascia edge.

## **RIDGE VENT**

For sloping roofs, provide continuous metal ridge vent at the top of roof along the ridge. Ridge vent shall be sized to provide adequate ventilation of the roofing system.

## **SCREEN**

Provide insect screen for all soffit, ridge, vents, louvers and all openings except for doors and windows unless otherwise specified.

## **EXPANSION JOINT PROFILES**

Metal expansion joints shall have a profile to allow deflection and expansion in two directions. Metal shall be treated for exterior conditions. Expansion joints shall be water proof.

## **ROOF GUTTERS**

Roof gutters shall be installed as indicated. Roof gutters shall be rigidly attached to the building. Supports for roof gutters shall be spaced according to manufacturer's recommendations. A 600 mm overlap, jointing with approved crimping or welding shall provide a continuous gutter along the building eaves.

## **DOWNSPOUTS**

Downspouts shall be designed and fabricated for each specific application. Unless otherwise specified or indicated, exposed edges shall be folded back to form a 13 mm (1/2 inch) hem on the concealed side, and bottom edges of exposed vertical surfaces shall be angled to form drips. Bituminous cement shall not be placed in contact with roofing membranes other than built-up roofing and shall not block the flow of water to the downspout for low sloped roofs. Downspouts shall be rigidly attached to the building with supports a minimum of 1.5 M apart. At the base of each downspout, concrete splash block shall be placed to eliminate damage to the building due to rain water runoff toward the building.

## **Wall Capping**

Wall Capping shall be installed according to the manufacturer's recommendations.

## **SEALANTS**

Provide a sealant compatible with the material(s) to which it is applied. Do not use a sealant that has exceeded shelf life or has jelled and cannot be discharged in a continuous flow from the gun. Apply the sealant in accordance with the manufacturer's instructions with a gun having a nozzle that fits the joint width. Force sealant into joints to fill the joints solidly without air pockets. Tool smooth fresh sealant after application to ensure adhesion. Sealant shall be uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints; apply sealant, and tool smooth as specified. Sealer shall be applied over the sealant when and as specified by the sealant manufacturer.

## **INTERIOR SEALANT**

ASTM C 834 or ASTM C 920, Type S or M, Grade NS, Class 12.5. Use NT, DIN, BS, or EN equal standards.

## **EXTERIOR SEALANT**

For joints in vertical and horizontal surfaces, provide ASTM C 920, Type S or M, Grade NS, DIN, BS, or EN equal standards.

## **FLOOR JOINT SEALANT**

(ASTM C 920) Type S or M, Grade P, class 25, use T

### **PRIMERS**

Provide a non-staining, quick-drying type and consistency recommended by the sealant manufacturer for the particular application. Immediately prior to application of the sealant, clean out loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's instructions. Do not apply primer to exposed finish surfaces.

### **BOND BREAKERS**

Provide the type and consistency recommended by the sealant manufacturer to prevent adhesion of the sealant to backing or to bottom of the joint. Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for each type of joint and sealant used, to prevent sealant from adhering to these surfaces. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.

### **BACKING**

Backing shall be 25 to 33 percent oversize for closed cell and 40 to 50 percent oversize for open cell material, unless otherwise indicated.

### **SURFACE PREPARATION**

Surfaces shall be clean, dry to the touch, and free from dirt frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion. Oil and grease shall be removed with solvent and surfaces shall be wiped dry with clean cloths. When resealing an existing joint, remove existing calk or sealant prior to applying new sealant. For surface types not listed below, the sealant manufacturer shall be contacted for specific recommendations.

### **MASKING TAPE**

Masking tape shall be placed on the finish surface on one or both sides of a joint cavity to protect adjacent finish surfaces from primer or sealant smears. Masking tape shall be removed within 10 minutes after joint has been filled and tooled.

### **BACKSTOPS**

Install backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide a joint of the depth specified.

### **PROTECTION**

Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled.

### **FINAL CLEANING**

Provide cleaning solvent type(s) recommended by the sealant manufacturer except for aluminum and bronze surfaces that will be in contact with sealant. Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

### **MASONRY AND OTHER POROUS SURFACES**

tttttt. Immediately scrape off fresh sealant that has been smeared on masonry and rub clean with a solvent as recommended by the sealant manufacturer. Allow excess sealant to cure for 24 hour then remove by wire brushing or sanding.

## **METAL AND OTHER NON-POROUS SURFACES**

uuuuuuu. Remove excess sealant with a solvent-moistened cloth.

## **LOUVERS**

### **INTERIOR LOUVERS**

SDI 111-C, Louvers shall be stationary sight-proof or lightproof type as required. Louvers for lightproof doors shall not transmit light. Detachable moldings on room or non security side of door; on security side of door, moldings to be integral part of louver. Form louver frames of 0.90 mm thick steel and louver blades of a minimum 0.60 mm. Louvers for lightproof doors shall have minimum of 20 percent net-free opening. Sight-proof louvers shall be inverted "V" blade design with minimum 55 or inverted "Y" blade design with minimum 40 percent net-free opening.

### **EXTERIOR LOUVERS**

Louvers shall be inverted "Y", "V" or "Z" type. Weld or tenon louver blades to continuous channel frame and weld assembly to door to form watertight assembly. Form louvers of hot-dip galvanized steel of same gage as door facings. Louvers shall have steel-framed insect screens secured to room side and readily removable. Provide aluminum wire cloth, 7 by 7 per 10 mm or 7 by 6 per 10 mm mesh, for insect screens.

## **WINDOWS, DOORS & GLAZING**

### **WINDOWS**

Operable windows shall be slider or awning type. A window with blackout film on the inside shall be provided only for the laundry space.

### **WINDOW SECURITY BARS**

Provide 20 mm diameter steel bars, 100 mm on center spacing. Provide frame and secure with fasteners a minimum of 100 mm deep.

### **WINDOW RENOVATION**

Provide steel bars similar to existing as shown in the pictures and drawings to protect from vandalism and entry. Provide a glazing laminate and secure within the bite of the window frame. Glazing laminate is to be a minimum 0.75 mm polyvinyl-butyl (PVB) layer, applied on the inside of the window.

## **MATERIALS**

### **ALUMINUM EXTRUSIONS**

Provide alloy and temper recommended by the window manufacturer for the strength, corrosion resistance, and application of required finish, meeting the DIN 1725 raw material requirements, but not less than 215 N/mm<sup>2</sup> ultimate tensile strength and not less than 1.5 mm thick at any location for main frame and sash members. Note: At the contractor's option extruded PVC windows may be provided in lieu of aluminum windows.

### **FASTENERS:**

Provide aluminum, nonmagnetic stainless steel, epoxy adhesive, or other materials warranted by the manufacturer to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors, and other components of window units.

## **REINFORCEMENT**

Where fasteners screw-anchor into aluminum less than 3 mm (0.125 inch) thick, reinforce the interior with aluminum or nonmagnetic stainless steel to receive screw threads or provide standard non-corrosive pressed-in splined grommet nuts.

## **EXPOSED FASTENERS**

Except where unavoidable for application of hardware, do not use exposed fasteners. For application of hardware, use fasteners that match the finish of the member or hardware being fastened, as appropriate.

## **ANCHORS, CLIPS, AND WINDOW ACCESSORIES**

Fabricate anchors, clips, and window accessories of aluminum, nonmagnetic stainless steel, or hot-dip zinc-coated steel or iron complying with the requirements of DIN 1748; provide sufficient strength to withstand design pressure indicated. As a minimum provide 3 anchors on each side of the frame.

## **COMPRESSION-TYPE GLAZING STRIPS AND WEATHERSTRIPPING**

Unless otherwise indicated, and at the manufacturer's option, provide compressible stripping for glazing and weather-stripping such as molded EPDM or neoprene gaskets.

## **SEALANT**

For sealants required within fabricated window units, provide type recommended by the manufacturer for joint size and movement. Sealant shall remain permanently elastic non-shrinking, and non-migrating. Comply with Sealants of these specifications for selection and installation of sealants.

## **WIRE FABRIC INSECT SCREEN**

Wire Fabric Insect Screen shall be permanently fixed to the exterior of operable windows.

## **HARDWARE**

Provide the manufacturer's standard hardware fabricated from aluminum, stainless steel, or other corrosion-resistant material compatible with aluminum and of sufficient strength to perform the function for which it is intended. Provide at a minimum one locking device on the interior of each window. Any operable window over 2 square meters shall have two locking devices as a minimum.

## **FABRICATION**

Provide aluminum windows with factory finish in all buildings as indicated in the design drawings. Window openings shall be provided with insect screening permanently fixed to the exterior. Provide a minimum of 3 anchors on each side of the frame into the adjoining structure. Provide weather stripping system for all exterior windows and doors.

## **METAL WINDOW SILLS**

Galvanized metal window sills, 0.90 mm (20 gauge), shall be installed on the exterior of all windows. The metal window sills shall have a turn down of 50 mm over the exterior masonry and stucco. Metal sills shall extend from side to side of the masonry opening in a single piece. Extend the metal window sill a minimum of 20 mm under the bottom of the aluminum windows. Install masonry mortar as required for a smooth surface under the window sills. Sills shall slope a minimum of 6 mm to the exterior and not allow water to puddle.

## **FINISHES**

Apply baked enamel in compliance with paint manufacturer's specifications for cleaning, conversion coating, and painting. Color shall be white meeting the requirements of DIN 50018

## **INSPECTION**

Inspect openings before beginning installation. Verify that rough or masonry opening is correct and the sill plate is level. Masonry surfaces shall be visibly dry and free of excess mortar, sand, and other construction debris.

## **INSTALLATION**

Comply with manufacturer's specifications and recommendations for installation of window units, hardware, operators, and other components of the work. Set window units plumb, level, and true to line, without warp or rack of frames or sash. Provide proper support and anchor securely in place. Set sill members and other members in a bed of compound or with joint fillers or gaskets, as shown, to provide weather tight construction. Refer to the Sealant sections for compounds, fillers, and gaskets to be installed concurrently with window units. Coordinate installation with wall flashings and other components of the work.

## **ADJUSTING**

Adjust operating sash and hardware to provide a tight fit at contact points and at weather stripping for smooth operation and a weather tight closure.

## **CLEANING**

Clean aluminum surfaces promptly after installation of windows. Exercise care to avoid damage to protective coatings and finishes. Remove excess glazing and sealant compounds, dirt, and other substances. Lubricate hardware and other moving parts.

## **DOORS**

Fire rated door assemblies including hollow metal frame and hardware shall be provided as indicated in the design drawings. Rated doors and frames shall be tested and approved as an assembly and shall be provided by a single manufacturer/distributor. Hardware for fire rated door assemblies shall be labeled as appropriate for fire rated applications and shall be coordinated with door manufacturer. All exterior doors shall be heavy duty metal doors with metal frames. Interior door can be hollow metal or solid-core wood doors with hollow metal frames. Commercial duty lock sets and hardware shall be used on all doors. Hinges shall be the 5 knuckle type or equivalent. Provide door handles and locksets that can be locked with a key on all doors. All door locks shall have a thumb latch on inside of door such that no key is necessary to exit the room or building. Coordinate the final keying schedule with Contracting Officer prior to ordering lock sets. Generally each building should have 8 master keys fitting all locks, 8 sub-master keys fitting all exterior doors and 3 keys each for each interior door. Include 25% spare key blanks for the amount of keys provided per building. Provide numbering system identifying key to associated room door. Provide weather stripping system for all exterior doors.

## **OVERHEAD DOORS**

Overhead doors shall be sized as required. Doors shall be fabricated from interlocking cold-rolled slats, designed to withstand building wind loading and be installed with wind locks. Curtain door slats shall be continuous for the width of the door and steel interlocking flat-profile design. Standard steel slats shall be made of roll-formed steel [22, 18, or 16] gauge steel, either primed & painted galvanized, stainless steel or anodized aluminum as provided by manufacture. Channel or curtain door guides shall be provided on each side of door. Overhead doors shall have a weather stripping bottom bar, head and jambs. Weather stripping and astragals shall be natural rubber or neoprene rubber. A manual pull chain shall be connected to the operation of the rolling door to provide open and close operation. Coiling housing shall be mounted above all opening, on the interior side. For rated openings, a fusible link shall be provided on the most hazardous side (example: kitchen rather than dining area). The coiling shutter shall also be rated and designed accordingly by the manufacture for the required fire rating. Hoods shall be fabricated from steel sheets with minimum yield strength of 227.5 MPa. Doors shall be counterbalanced by an adjustable, steel, helical torsion spring mounted around a steel shaft in a spring barrel and connected to the door curtain with the required barrel rings.

Counterbalance-barrel components shall be as follows:

vvvvvvv. Spring barrels shall be hot-formed structural-quality carbon steel, welded or seamless pipe. Pipe shall be of sufficient diameter and wall thickness to limit deflection to a maximum of 1/360 of the span.

wwwwwww. Counterbalance springs shall be oil-tempered helical steel springs designed with a safety factor of 4. Springs shall be sized to counterbalance the weight of the curtain at any point of its travel, and shall be capable of being adjusted to counterbalance not less than 125% of the normal curtain load. Spring adjustment shall be arranged in such a way that the curtain need not be raised or lowered to secure the adjustment.

xxxxxxx. Counterbalance shafts shall be case-hardened steel of the proper size to hold the fixed ends of the spring and carry the torsion load of the spring.

yyyyyyy. Barrel plugs shall be fabricated from cast steel machined to fit the ends of the barrel. Plugs shall secure the ends of the spring to the barrel and the shaft.

zzzzzzz. Barrel rings shall be fabricated from malleable iron of the proper in-volute shape to coil the curtain in a uniformly increasing diameter.

aaaaaaaa. Shaft bearings shall be factory sealed ball bearings of the proper size for load and shaft diameters.

bbbbbbb. Door operators shall consist of an endless steel hand chain, chain-pocket wheel and guard, and a geared reduction unit of at least a 3:1 ratio. Required pull for operation shall not exceed 16 kg. Chain hoists shall have a self-locking mechanism allowing the curtain to be stopped at any point in its upward/downward travel and to remain in that position until moved to the fully open or closed position. Hand chains shall be cadmium-plated alloy steel with a yield point of at least three times the required hand-chain pull. Pretreated zinc-coated steel sheets shall be given the manufacturer's standard prime coat and an enamel finish coat applied to the exterior face after forming.

ccccccc. After installation, doors, track, and operating equipment shall be examined and tested for general operation and weather against the specified wind pressure, and weather resistance. Doors that fail the required tests shall be adjusted and retested. Doors that have been adjusted and fail subsequent tests shall be removed and replaced with new doors at no additional cost.

## **STEEL DOORS**

SDI A250.8, except as specified otherwise. Prepare doors to receive specified hardware. Undercut where indicated. Exterior doors shall have top edge closed flush and sealed to prevent water intrusion. Doors shall be 44.5 mm thick, unless otherwise indicated. Doors shall be constructed using heavy gauge steel with minimum thickness of 1.2 mm.

## **WOOD DOORS**

Provide solid core wood doors. Wood doors shall meet the requirements and standards of the Window and Door Manufacturers Association (WDMA) and the American Architectural Manufacturers Association (AAMA) and ASTM 2074-00 Fire Test for fire rated doors. Doors shall be 44.5 mm thick.

## **SOLID PLASTIC & PHENOLIC DOORS**

Not allowed for this project. [Solid Plastic & Phenolic doors and frames are for interior wet room use only. Solid Plastic & Phenolic doors and frames may be used for bath stalls, shower stalls, and toilets stalls.]

## **FIRE AND SMOKE DOORS AND FRAMES**

The requirements of NFPA 80 and NFPA 105 respectfully shall take precedence over details indicated or specified.

## **THRESHOLDS**

All exterior doors (except Mech/Elect rooms) shall be provided with manufactured metal thresholds conforming to ANSI/BHMA A156.21. Doors at all wet areas with ceramic tile or terrazzo tile flooring shall be provided with solid marble thresholds with marble threshold set 13 mm above tile. Thresholds shall span continuously from jamb to jamb.

## **STANDARD STEEL FRAMES**

SDI A250.8, except as otherwise specified. Form frames to sizes and shapes indicated, with welded corners or knock-down field-assembled corners. Provide steel frames for doors, transoms, sidelights, mullions, cased openings, and interior glazed panels, unless otherwise indicated.

## **WELDED FRAMES**

Continuously weld frame faces at corner joints. Mechanically interlock or continuously weld stops and rabbets. Grind welds smooth.

## **STOPS AND BEADS**

Form stops and beads from 0.9 mm thick steel. Provide for glazed and other openings in standard steel frames. Secure beads to frames with oval-head, countersunk Phillips self-tapping sheet metal screws or concealed clips and fasteners. Space the fasteners approximately 300 to 400 mm on centers. Miter molded shapes at corners. Use butt or miter square or rectangular beads at corners.

## **WEATHER-STRIPPING, INTEGRAL GASKET**

Provide weather-stripping that is a standard cataloged product of a manufacturer regularly engaged in the manufacture of this specialized item. Black synthetic rubber gasket with tabs for factory fitting into factory slotted frames, or extruded neoprene foam gasket made to fit into a continuous groove formed in the frame, may be provided in lieu of head and jamb seals. Weather stripping shall be looped neoprene, synthetic rubber gasket, or vinyl held in an extruded non-ferrous metal housing. Air leakage of weather stripped doors shall not exceed 0.003125 cubic meters per second of air per square meter of door area when tested in accordance with ASTM E 283.

## **ANCHORS**

Provide anchors to secure the frame to adjoining construction. Provide steel anchors, zinc-coated or painted with rust-inhibitive paint, anchors not lighter than 1.2 mm thick.

## **WALL ANCHORS**

Provide at least three anchors for each jamb. For frames which are more than 2285 mm in height, provide one additional anchor for each jamb for each additional 760 mm or fraction thereof.

## **FLOOR ANCHORS**

Provide floor anchors drilled for 10 mm anchor bolts at bottom of each jamb member. Where floor fill occurs, terminate bottom of frames at the indicated finished floor levels and support by adjustable extension clips resting on and anchored to the structural slabs.

## **HARDWARE PREPARATION**

Provide minimum hardware reinforcing gages as specified in ANSI A250.6. Drill and tap doors and frames to receive finish hardware. Prepare doors and frames for hardware in accordance with the applicable requirements of SDI A250.8 and ANSI A250.6. For additional requirements refer to BHMA A115. Drill and tap for surface-applied hardware at the project site. Build additional reinforcing for surface-applied hardware into the door at the factory. Locate hardware in accordance with the requirements of SDI A250.8, as applicable. Punch door frames, with the exception of frames that will have weather-stripping or lightproof or soundproof gasketing, to receive a

minimum of two rubber or vinyl door silencers on lock side of single doors and one silencer for each leaf at heads of double doors. Set lock strikes out to provide clearance for silencers.

## **HINGES**

Exterior hinges shall have non-removable pins and be satin-chrome steel or stainless steel; Grade 1 anti-friction or ball bearing; and 3 each of 115 mm x 115 mm per leaf up to 900 mm wide door 125 mm x 125 mm for doors 900 mm to 1,200 mm wide. Interior hinges shall be Grade 1; antifriction or ball bearing; and 3 each of 115 mm x 115 mm per leaf up to 900 mm wide door 125 mm x 125 mm for doors 900 mm to 1,200mm wide. Hinges for labeled fire doors must be either steel or stainless steel. Hinges shall conform to ANSI/BHMA A156.1 and A156.7. Locksets, Latchets, Exit Devices, and Push and Pull Plates: Exterior doors shall have mortise locks conforming to ANSI/BHMA A156.13 for metal doors. Emergency exit devices shall be Grade 1, flush mounted type. Interior doors shall have mortise locksets conforming to ANSI/BHMA A156.13, Series1000, Grade 1. All locks and latchsets shall be the product of the same manufacturer. Locksets, padlocks and latchsets shall be provided, as required, with lever handles on each side. Provide heavy duty hasp and locks at all fuel storage tanks.

## **CLOSERS**

Closers shall be provided on all exterior doors and fire-rated doors. All exterior doors and interior doors that require security or privacy such as toilet room shall be provided with heavy-duty hydraulic closers. Closers shall conform to ANSI/BHMA A156.4, Grade 1. Closers shall be surface-mounted, modern type, with cover. Closer shall be adjustable type and have slow-down control to prevent door leaf from slamming to frame. Provide door silencers on all door frames provided with closers.

## **DOOR STOPS**

Door Stops: Door stops shall be provided on all exterior and interior doors. Door stops shall comply with ANSI/BHMA A156.16 and shall be satin chrome on bronze, Grade 1.

## **KEYING SYSTEM & LOCK CYLINDERS**

Provide locks for all doors. A [Master] key system shall be provided. [Master key system shall include a separate & different key for each door with a master key provided to open any & all doors.] Cylinders: Lock cylinders shall comply with BHMA A156.5. Lock cylinder shall have six pins. Cylinders shall have key removable type cores. All locksets, exit devices, and padlocks shall accept same interchangeable cores.

## **FINISHES**

All surfaces of doors and frames shall be thoroughly cleaned, chemically treated and factory primed with a rust inhibiting coating as specified in SDI A250.8, or paintable A25 galv-annealed steel without primer. Where coating is removed by welding, apply touchup of factory primer. Provide door finish colors as selected by the Contracting Officer from the color selection samples.

## **WATER-RESISTANT SEALER**

Provide a water-resistant sealer compatible with the specified finish as approved and as recommended by the door manufacturer.

## **FABRICATION AND WORKMANSHIP**

Finished doors and frames shall be strong and rigid, neat in appearance, and free from defects, waves, scratches, cuts, dents, ridges, holes, warp, and buckle. Molded members shall be clean cut, straight, and true, with joints coped or mitered, well formed, and in true alignment. Dress exposed welded and soldered joints smooth. Design door frame sections for use with the wall construction indicated. Corner joints shall be well formed and in true alignment. Conceal fastenings where practicable. On wraparound frames for masonry partitions, provide a throat opening 3 mm larger than the actual masonry thickness. Design other frames in exposed masonry walls or partitions to allow sufficient space between the inside back of trim and masonry to receive caulking compound.



## **INSTALLATION**

Before installation, seal top and bottom edges of doors with the approved water-resistant sealer. Seal cuts made on the job immediately after cutting using approved water-resistant sealer. Fit, trim, and hang doors with a 2 mm minimum, 3 mm maximum clearance at sides and top, and a 5 mm minimum, 6 mm maximum clearance over thresholds. Provide 10 mm minimum, 11 mm maximum clearance at bottom where no threshold occurs. Bevel edges of doors at the rate of 3 mm in 50 mm. Door warp shall not exceed 6 mm when measured in accordance with WDMA I.S. 1-A. Hang doors in accordance with clearances specified in SDI A250.8. After erection and glazing, clean and adjust hardware.

## **FRAMES**

Set frames in accordance with SDI 105. Plumb, align, and brace securely until permanent anchors are set. Anchor bottoms of frames with expansion bolts or powder-actuated fasteners. Build in or secure wall anchors to adjoining construction. Backfill frames with mortar. When an additive is provided in the mortar, coat inside of frames with corrosion-inhibiting bituminous material. For frames in exterior walls, ensure that stops are filled with rigid insulation before grout is placed.

## **GROUTED FRAMES**

For frames to be installed in exterior walls and to be filled with mortar or grout, fill the stops with strips of rigid insulation to keep the grout out of the stops and to facilitate installation of stop-applied head and jamb seals.

## **PROTECTION AND CLEANING**

Protect doors and frames from damage. Repair damaged doors and frames prior to completion and acceptance of the project or replace with new, as directed. Wire brush rusted frames until rust is completely removed. Clean thoroughly. Apply an all-over coat of rust-inhibitive paint of the same type used for shop coat. Upon completion, clean exposed surfaces of doors and frames thoroughly. Remove mastic smears and other unsightly marks.

## **WEATHER STRIPPING**

Install doors in strict accordance with the manufacturer's printed instructions and details. Weather strip the exterior swing-type doors at sills, heads and jambs to provide weather tight installation. Apply weather stripping at sills to bottom rails of doors and hold in place with a brass or bronze plate. Apply weather stripping to door frames at jambs and head. Shape weather stripping at sills to suit the threshold. Insert gasket in groove after frame is finish painted.

## **PRE-FITTING**

At the Contractor's option, doors may be provided factory pre-fit. Doors shall be sized and machined at the factory by the door manufacturer in accordance with the standards under which they are produced. The work shall include sizing, beveled edges, mortising, and drilling for hardware and providing necessary beaded openings for glass and louvers. Provide the door manufacturer with the necessary hardware samples, and frame and hardware schedules as required to coordinate the work.

## **GLAZING**

All glazing shall be double laminated and insulating. Laminated glazing shall be constructed of two panes of minimum 3 mm annealed glass laminated to a minimum 0.75 mm polyvinyl-butylal (PVB) interlayer, in accordance with UFC 4-010-01. Two panes of laminated glazing shall be installed in each window with hermetically sealed 13 mm airspace between them. After installation of windows, the contractor shall install a minimum 3 mil tinted film (Scotch Shield Ultra Safety and Security Window Film or approved equal) to the inside face of the glazing in accordance with manufacturer's instructions.

## **TEMPERED GLAZING**

Tempered glass shall be kind FT fully tempered flat type. Class 1 clear, condition A uncoated surface, Quality q3-

glazing select, conforming to ASTM, DIN, BS or EN standards. Color shall be clear.

## **SEALANT**

Sealant shall be elastomeric conforming to ASTM, DIN, BS, or EN standards. Type S or M, Grade NS, Class 12.5, Use G, of type chemically compatible with setting blocks, preformed sealing tape and sealants used in manufacturing insulation glass. Color of sealant shall be as selected from manufacturer's full range of standard colors by Contracting Officer.

## **GLAZING GASKETS**

Glazing gaskets shall be extruded with continuous integral locking projection designed to engage into metal glass holding members to provide a watertight seal during dynamic loading, building movements and thermal movements. Glazing gaskets for a single glazed opening shall be continuous one-piece units with factory-fabricated injection-molded corners free of flashing and burrs. Glazing gaskets shall be in lengths or units recommended by manufacturer to ensure against pull-back at corners.

## **FIXED GLAZING GASKETS**

Fixed glazing gaskets shall be closed-cell (sponge) smooth extruded compression gaskets of cured elastomeric virgin neoprene compounds conforming to ASTM, DIN, BS or EN standards.

## **WEDGE GLAZING GASKETS**

Wedge glazing gaskets shall be high-quality extrusions of cured elastomeric virgin neoprene compounds, ozone resistant, conforming to ASTM, DIN, BS, or EN standards.

## **PUTTY AND GLAZING COMPOUND**

Glazing compound shall conform to ASTM, DIN, BS, or EN standards for face-glazing metal sash. Putty shall be linseed oil type conforming to DIN, BS, or EN standards for face-glazing primed wood sash. Putty and glazing compounds shall not be used with insulating glass or laminated glass.

## **SETTING AND EDGE BLOCKING**

Neoprene setting blocks shall be dense extruded type conforming to ASTM, DIN, BS, or EN standards. Silicone setting blocks shall be required when blocks are in contact with silicone sealant. Profiles, lengths and locations shall be as required and recommended in writing by glass manufacturer.

## **PREPARATION**

Openings and framing systems scheduled to receive glass shall be examined for compliance with glass manufacturer's recommendations including size, squareness, offsets at corners, presence and function of weep system, face and edge clearance requirements and effective sealing between joints of glass-framing members. Detrimental materials shall be removed from glazing rabbet and glass surfaced and wiped dry with solvent. Glazing surfaces shall be dry and free of frost.

## **INSTALLATION**

Glass and glazing work shall be performed in accordance with, glass manufacturer's instructions and warranty requirements. Glass shall be installed with factory labels intact and removed only when instructed. Edges and corners shall not be ground, nipped or cut after leaving factory. Springing, forcing or twisting of units during installation will not be permitted.

## **CLEANING**

Upon completion of project, outside surfaces of glass shall be washed clean and the inside surfaces of glass shall be washed and polished in accordance with glass manufacturer's recommendations.

## **PROTECTION**

Glass work shall be protected immediately after installation. Glazed openings shall be identified with suitable warning tapes, cloth, or paper flags, attached with non-staining adhesives. Reflective glass shall be protected with a protective material to eliminate any contamination of the reflective coating. Protective material shall be placed far enough away from the coated glass to allow air to circulate to reduce heat buildup and moisture accumulation on the glass. Glass units which are broken chipped, cracked, abraded, or otherwise damaged during construction activities shall be removed and replaced with new units.

## **FINISHES**

All exterior metal surfaces, including container exterior shall be painted to match existing adjacent buildings. Interior shall be painted gypsum board or plaster ceilings and walls. Provide color boards with all materials, paints and finishes for COR approval prior to ordering materials. Color boards shall remain on site in view or with the project engineer until completion of the facility.

## **RENOVATION WORK**

Disturbed, patched, repaired and renovated areas shall be finished to provide protective coatings. At a minimum, wall and ceiling areas shall be plastered with similar material to match adjacent surfaces. Areas shall be sanded, cleaned and prepared for primer and two coats of paint. Paint shall be feathered out a meter over the existing surfaces to blend in patch work with existing. Areas requiring tiles shall match existing tile areas. All renovated areas shall be returned to a new finished state.

## **PAINTS & COATINGS**

Paints and coatings shall be provided as a specification 09 90 00 Finishes, Paints and Coatings.

## **CONCRETE HARDENER**

Concrete sealers shall be a liquid chemical sealer-hardener compound. Apply a minimum of two coats. Sealer shall be compatible with climate temperatures and not reduce the adhesion of resilient flooring, tile, paint, roofing, waterproofing or other materials applied to the concrete.

## **PAINT**

Paint shall be oil based or latex. A primer shall be placed prior to any coats of paint. A minimum of two (2) coats of paint shall be used for each surface

Exposed exterior steel

Exposed exterior steel shall include items such as trim, frames, door, pipe rails and other exposed steel surfaces. Paint with one coat oil-based primer, with 2 coats of oil-based alkyd gloss enamel, color to be selected by the Contracting Officer from the color board provided by the Contractor.

## **EXPOSED WOOD**

Exposed wood shall include items such as trim, frames, doors and other exposed wood surfaces. Paint with one coat oil-based primer, 2 coats of gloss enamel, color to be selected by the Contracting Officer from the color board provided by the Contractor

## **EXPANSION JOINTS IN PLASTER & STUCCO**

Expansion joints shall be provided as specified in ASTM, DIN 18339, BS or EN Standards for all walls, floors and ceilings.

## **EXTERIOR WALLS**

The exterior of all buildings shall be stucco and/or plaster conforming to ASTM C926. A temperature of between 4

and 27 degrees C shall exist for a period of not less than 48 hours prior to application of plaster and for a period of at least 48 hours after plaster has set. Control joints shall be designed for expansion and contraction of plaster work due to thermal exposure. Control joints shall comprise of back to back casing beads. Install new stucco in 2 coats. The first coat shall be a scratch coat approximately 10 mm thick. Allow 7 days to cure. The second coat shall be finish stucco, smooth finish, approximately 10 mm thick. Allow 7 days to cure before painting. Stucco showing over sanding, cracks, blisters, pits, checks, discoloration or other defects is not acceptable. Defective plaster work shall be removed and replaced with new plaster at the expense of the Contractor. Patching of defective work will be permitted only when approved by the Contracting Officer. Patching shall match existing adjacent work in texture and color. All exterior color finish shall be integral with the stucco finish. No painted stucco shall be permitted due to minimize future maintenance.

## **INTERIOR WALLS**

### **PLASTER WALLS**

Interior walls shall be plaster applied in a similar manner as exterior stucco. Paint with 2 coats of semi-gloss off-white with less than .06% lead by weight color to be selected by the Contracting Officer from the color board provided by the Contractor.

### **GYPSUM BOARD WALLS**

Gypsum wall board shall not be used unless specifically noted in the contract documents or written approval from the Contracting Officer. If GWB is used; contractor must meet fire rating requirements per NFPA 252 standards. For 13 mm (1/2") thick gypsum board structural fastener supports shall be not further apart than 400 mm.

### **SOUND CONTROL**

Walls between sleeping rooms shall have a Sound Transmission Class (STC) minimum 45-55 or better, An STC value is a single number rating used to characterize the sound insulating value of a partition (wall, floor, or ceiling). All walls shall be caulked at floor and ceiling prior to installing wall base. All openings between rooms shall be caulked or sealed. Doors shall have rubber seal around frames and threshold.

### **HARDEN INTERIOR WALLS**

**IMPORTANT:** INTERIOR WALL STRUCTURE SHALL BE EITHER CMU (MIN THICKNESS = 100 mm), 3D PANEL OR REINFORCED CONCRETE. Interior walls shall be plaster applied in a similar manner as exterior stucco. Paint with 2 coats of semi-gloss off-white with less than .06% lead by weight color to be selected by the Contracting Officer from the color board provided by the Contractor.

## **INTERIOR CEILINGS**

### **PLASTER CEILINGS**

Ceilings shall be plaster applied in 2 coats over wire mesh, which is to be stapled or secured by wire to the 20 mm x 60 mm wood battens. Paint ceiling with 2 coats of flat white, with less than .06% lead by weight.

### **GYPSUM BOARD CEILINGS**

Gypsum board may be used in lieu of plaster but framing supports for Gypsum board shall be as follows: For 13 mm (1/2") thick gypsum board structural fastener supports shall be not further apart than 400 mm. If gypsum board is thicker follow guidelines in ASTM C 840 for supports and fastener frequency. Fire rated gypsum board: follow NFPA 252 guidelines. The minimum for one hour fire rating is two layers of 15 mm type X GWB or European EN 520 equivalent.

### **CONCRETE CEILINGS**

Concrete ceilings shall be exposed concrete painted with 2 coats of flat white, with less than .06% lead by weight.

## **TILE WORK**

Tile work shall not be performed unless the substrate and ambient temperature is at least 10 degrees C and rising. Temperature shall be maintained above 10 degrees C while the work is being performed and for at least 7 days after completion of work. Upon completion, tile surfaces shall be thoroughly cleaned in accordance with manufacturer's approved cleaning instructions. Acid shall not be used for cleaning glazed tile. Floor tile with resinous grout or with factory mixed grout shall be cleaned in accordance with instructions of the grout manufacturer. After the grout has set, tile wall surfaces shall be given a protective coat of a non-corrosive soap or other approved method of protection.

dddddd. Floors in wet areas shall be ceramic tile with thin set mortar. Joints shall be 2-3 mm. Waterproof gray grout shall be applied the full depth of the tile. Floors shall slope, minimum 1/50, to floor drains. Slope shall be obtained with sloping mortar bed of minimum 20 mm thickness. Provide continuous waterproofing membrane beneath sloping mortar bed, turn up wall 300 mm behind wall base. Membrane shall be fully sealed at joints and shall shed water into body of floor drain. Color of tile shall be selected by the Contracting Officer from samples provided by the Contractor.

## **TILE RENOVATION**

eeeeeee. Existing floors shall be cleaned, inspected and damaged areas fixed. A damaged tile shall be replaced as a full tile. Grout around it shall be removed to allow bonding to the adjacent grout lines. Existing floors shall be covered with a clear epoxy sealer.

ffffff. Floors that require renovation shall be cleaned and grout removed 10 mm down from the surface by tools. Grout shall be swept clean and new grout placed. Damaged tiles shall be replaced as full tiles. Floor areas damaged from water shall be cleaned, swept and tiles removed and reset. Finished renovated floors shall be covered with a clear epoxy water proof sealer.

ggggggg. Removal of tiled floors. Where requested, floor tiles shall be carefully removed for reuse. Grout shall be ground down and removed. Floor shall be leveled with a concrete floor leveler, brush finished and sealed. Floor drains and other imbedded items shall be made operable by sloping to drains and addressing other imbedded items appropriately to their function.

## **SPECIALTIES**

### **MIRRORS**

600 mm x 900 mm, 6 mm plate glass shall be mounted above all lavatories. Mount bottom of mirrors 1100 mm above finished floor.

### **TOILET PAPER HOLDERS**

Toilet paper holders with removable pin shall be stainless steel, installed approximately 200 mm above floor by eastern toilets].

### **SHOWER CURTAIN RODS & SHOWER CURTAIN**

Shower curtain rods, stainless steel, heavy duty, 1.20 mm (18 gauge) shall be mounted between the walls of each shower stall. Mount rod 2000 mm above finished floor. Provide a shower curtain with support rings for each shower stall.

### **GRAB-BARS**

Stainless steel grab-bars, heavy duty, 1.20 mm (18 gauge), two each 900 mm and 1050 mm long, 40 mm diameter shall be mounted behind and beside all eastern toilets, and bathtubs as they occur. Mount grab-bars between 610mm - 900 mm height on the walls. Each bar shall support no less than 91 Kg (200 lbs) in any direction.

## **PAPER TOWEL DISPENSERS**

Paper towel dispensers, 0.683 mm Type 304 stainless steel, surface mounted. Furnish tumbler key lock locking mechanism.

## **LIGHT DUTY METAL SHELF**

Provide a 600 mm long x 150 mm wide, light duty stainless steel shelf with integral brackets over each lavatory and laundry sink.

## **ROBE HOOKS**

Provide a minimum of two robe hooks on all toilet and shower stalls.

## **BUILDING SYSTEMS**

### **ARCH SPAN**

Insulated Arch-Span metal roofing systems shall be supported by reinforced concrete stem walls approximately 2500 mm in height. Stem walls shall be insulated and finished with gypsum board or plaster on the interior, and finished with stucco on the exterior. The floor slab shall be reinforced concrete with a minimum thickness of 150 mm placed on a clean vapor barrier above a capillary water barrier of 150 mm minimum thickness on properly compacted soil. Exterior walls shall be insulated with a minimum of R-20 insulation, and provide a minimum of R-30 insulation for the roof. The roof insulation system shall be spray applied and harden to a durable rigid surface, as per the arch span manufacturer's standards.

Ribbed steel roof panels shall be mechanically fabricated from prefinished steel coil and joined by machines and operators, all certified by the arch span building manufacturer. The contractor shall present certificates of manufacturer's training for machine operators, and certificates of authenticity for proprietary machines and equipment.

Only prefinished steel coil certified by the arch-span system manufacturer shall be used on this project. Fasteners for accessories shall be manufacturer's standard. All materials and Concealed fasteners for steel roof panels shall be zinc-coated steel, aluminum, corrosion resisting steel, or nylon capped steel. Fasteners for structural connections shall provide both tensile and shear strength of not less than 350 kg per fastener.

### **PRE-ENGINEERED METAL BUILDING SYSTEMS**

Metal building systems shall comply with the requirements of the MBMA Low Rise Building Systems Manual-latest edition. Facilities designated as long-span, shall have no interior columns.

### **CONEX CONTAINER UNIT**

All conex containers shall be tightly bolted to anchors set in a concrete foundation, be stack and bolted tightly to adjacent containers, with corridor, stairs etc. as indicated in drawings. Minimum clear ceiling height shall be 2400 mm. the second level walkway shall be a minimum of 1500 mm wide at the latrine area and 1300mm at all other areas. Metal stairs shall be designed per IBC 2006 codes. The Contracting Officers Representative (COR) reserves the right to inspect and reject any conex containers not in good condition. All conex containers shall be inspected and accepted by Architect prior to leaving factory. See plans and these technical requirements for extent of work. Provide exterior walls with a minimum insulation with a value of R-20, floors with R-19 and ceilings with R-30. All insulation in exterior toilet walls containing water pipes shall be rigid foam board insulation. Insulation in areas next to concrete or earth shall be rigid foam board insulation. All insulation between living quarters and living quarters and corridor shall have a Sound Transmission Class (STC) minimum 45 - 55 or better. All walls shall be caulked at floor and ceiling prior to installing wall base. All openings between rooms shall be caulked or sealed. Doors shall have rubber seals around frames and thresholds. Doors shall be hollow metal with metal frame and have one (1) hour rating. Exterior metal Color: off-white semi gloss. Glazing shall be 6 mm laminated glass. The windows shall be operated from the interior and be provided with insect screens mounted on the exterior.

## **FORCE PROTECTION**

For force protection reasons, roof structure shall be 0.60 mm (24 gauge) metal corrugated roofing over asphalt membrane layer over 25 mm plywood layer. Conex container box roof shall contain a 70 mm layer of sandbags. The contractor shall determine the structural load capability of the conex container roof as part of the design effort.

## **MECHANICAL**

### **GENERAL**

The work covered by this section consists of design, supply, fabrication, and installation of new building heating, ventilation and air-conditioning (HVAC) systems. It also includes the delivery to site, erection, setting to work, adjusting, testing, balancing and handing over in perfect operating and running condition all of the HVAC equipment including all necessary associated mechanical works.

### **SPECIALIST SUB-CONTRACTORS QUALIFICATIONS**

The HVAC works shall be executed by an air-conditioning specialist sub-contractor experienced in the design and construction HVAC equipment to include conventional compression systems, heat pump units, and space heaters in satisfying the specified indoor design conditions. HVAC equipment will normally consist of split-pack heat pump units suitable for low ambient conditions, industrial quality unit heaters, air ventilation systems and specialized industrial ventilation systems. The HVAC heating and cooling load calculations shall be prepared using recognized HVAC load analysis programs such as Trane "Trace" or Carrier "HAP". The heating and cooling load calculations shall take into account the site elevation and ambient design temperatures when determining required HVAC equipment capacities and airflows. The HVAC specialist shall submit the complete HVAC analysis with equipment layout drawings at the 65% design submittal. The HVAC analysis shall clearly state and the drawings clearly show the type of systems to be used and how the system will satisfy the specified indoor design conditions. Provide complete, edited specifications using the UFGS specs for selected HVAC system. The edited specifications shall be submitted along with the 65% design submittal. The specifications shall be coordinated with the manufacturer of the equipment.

### **CODES, STANDARDS AND REGULATIONS**

The equipment, materials and works covered under the heating, ventilation and air-conditioning services shall conform to the referenced standards, codes and regulations where applicable except where otherwise mentioned under each particular clause.

### **DESIGN CONDITIONS**

Outside Design Conditions (Contractor shall verify the ambient conditions with available and reliable local weather data). Contractor shall use the below weather data for equipment compatibility with the site conditions.

Bagram area :

Latitude – (approx.) 35 deg. North

Longitude – (approx.) 69 deg. East

Elevation – (approx.) 1490 M (4888 ft.)

Summer - 35 deg C (95 deg F) Dry Bulb (DB) [& 18.6 deg C (66 deg F) Wet Bulb (WB)]

Winter – (-12.8 deg C/9 deg F)

Daily Range – 18.3 deg C (33 deg F)

Darualaman area:

Latitude – (approx.) 34.42 deg. North

Longitude – (approx.) 69.11 deg. East

Elevation – (approx.) 1737 M (5700 ft.)

Summer – 34 deg C (93 deg F) Dry Bulb (DB) [& 15.6 deg C (60 deg F) Wet Bulb (WB)]

Winter – (-8 deg C/18 deg F)

Daily Range – 19 F)

Farah area

Latitude – (approx.) 32.22 deg. North

Longitude – (approx.) 62.11 deg. East

Elevation – (approx.) 700 M (2297 ft.)

Summer – 41.1 deg C (106 deg F) Dry Bulb (DB) [& 22.5 deg C (72.5 deg F)] Wet Bulb (WB)]

Winter – (1.6 deg C/35 deg F)

Daily Range – data unknown)

Gardez area:

Latitude – (approx.) 33.60 deg. North

Longitude – (approx.) 69.22 deg. East

Elevation – (approx.) 2350 M (7710 ft.)

Summer – 29 deg C (84 deg F) Dry Bulb (DB) [& 12.2 deg C (54 deg F)] Wet Bulb (WB)]

Winter – (-10deg C/ 14deg F)

Daily Range – data unknown)

Ghazni/ Khair Kot area:

Latitude – (approx.) 33 deg. North

Longitude – (approx.) 68 deg. East

Elevation – (approx.) 2183 M (7162 ft.)

Summer – 30.5 deg C (87 deg F) Dry Bulb (DB) [& 15.6 deg C (60 deg F)] Wet Bulb (WB)]

Winter – (-7.2 deg C/19 deg F)

Daily Range – data unknown)

Herat area:

Latitude – (approx.) 34.22 deg. North

Longitude – (approx.) 62.22 deg. East



Elevation – (approx.) 964 M (3163 ft.)

Summer – 38 deg C (100 deg F) Dry Bulb (DB) [& 20 deg C (68 deg F) Wet Bulb (WB)]

Winter – (-6 deg C/21 deg F)

Daily Range – 17 F)

Jalalabad area:

Latitude – (approx.) 34 deg. North

Longitude – (approx.) 70 deg. East

Elevation – (approx.) 580 M (1903 ft.)

Summer – 39.6 deg C (103 deg F) Dry Bulb (DB) [& 25.6 deg C (78 deg F)] Wet Bulb (WB)]

Winter – (4.6 deg C/40 deg F)

Daily Range – data unknown)

Kabul area:

Latitude – (approx.) 34.55 deg. North

Longitude – (approx.) 69.22 deg. East

Elevation – (approx.) 1790 M (5876 ft.)

Summer – 34 deg C (93 deg F) Dry Bulb (DB) [& 15.6 deg C (60 deg F) Wet Bulb (WB)]

Winter – (-8 deg C/18 deg F)

Daily Range – 19 F)

Kandahar area:

Latitude – (approx.) 31.5 deg. North

Longitude – (approx.) 65.85 deg. East

Elevation – (approx.) 1010 M (3314 ft.)

Summer – 41 deg C (106 deg F) Dry Bulb (DB) [& 21.7 deg C (71 deg F)] Wet Bulb (WB)

Winter – (-1.7 deg C/29 deg F)

Daily Range – 21 F)

Khost:

Latitude: 33 22 degrees N

Longitude: 69 58 degrees E

Elevation: 1146 meters (3760 ft)

Summer: 35.5 C (96° F) DB and 25.8° C (78.5° F) WB.

Winter: 0° C (32° F) db

Range of DB: Summer 15.5 (28)

Average Extreme Wind: 40 kph (25 mph)

Kunduz area:

Latitude – (approx.) 36 deg. North

Longitude – (approx.) 68 deg. East

Elevation – (approx.) 432 M (1417 ft.)

Summer – 38.8 deg C (102 deg F) Dry Bulb (DB) [& 22.8 deg C (73 deg F)] Wet Bulb (WB)

Winter – (0 deg C/32 deg F)

Daily Range – data unknown)

Lashkar Gah (unconfirmed):

Latitude: 31.58 degrees N

Longitude: 64.37 degrees E

Altitude: 773m (2536ft)

Summer: 44.4 C (112F) db and 24.4° C (76° F) WB.

Winter: -5.5° C (22° F) db

Range of DB: Summer 17.8 (32)

Average Extreme Wind: 40 kph (25 mph)

Prevailing Wind Direction: Summer SE, Winter ENE

Mazar-e-Sharif area:

Latitude – (approx.) 36 deg. North

Longitude – (approx.) 67 deg. East

Elevation – (approx.) 391 M (1284 ft.)

Summer – 37.8 deg C (100 deg F) Dry Bulb (DB)] [& 20.5 deg C (69 deg F) Wet Bulb (WB)

Winter – (0 deg C / 32 deg F)

Daily Range – data unknown)

Pol-e-Charki area:

Latitude – (approx.) 34.56 deg. North

Longitude – (approx.) 69.37 deg. East

Elevation – (approx.) 1830 M (6000 ft.)

Summer – 34 deg C (93 deg F) Dry Bulb (DB) [& 15.6 deg C (60 deg F) Wet Bulb (WB)]

Winter – (-8 deg C/18 deg F)

Daily Range – 19 F)

Qalat:

Latitude: 32 degrees N

Longitude: 66 degrees 54 E

Altitude: 1565 meters (5135 ft)

Summer: 37.7 C (100° F) DB and 16.1° C (61° F) WB.

Winter: -3.9° C (25° F) db

Range of DB: Summer 18.3 (33)

Average Extreme Wind: 40 kph (25 mph)

Prevailing Wind Direction: Summer W

### INDOOR DESIGN CONDITION

Toilet/Shower/Laundry Bldgs	No cooling	Heating 20 C (68 F)
Guard Towers/Sheds/QRF	Cooling 25.6 C (78 F)	Heating 20 C (68 F)

### NOISE LEVEL

Noise levels inside occupied spaces generated by HVAC systems indoors shall not exceed **NC 35**

### INTERNAL LOADS

hhhhhhh. Occupancy: Use ASHRAE standards to calculate sensible and latent heat from people. In general, light/moderate office work is 73watts sensible and 45watts latent.

iiiiiii. Lighting: 21.5 W/m2 (2 W/Ft2) maximum (however lighting levels shall meet minimum requirements and shall be accounted for in the heating and cooling loads based on the actual lighting design).

jjjjjjj. Outdoor Air: In general this requires 2.5 L/s/Person (5 CFM/Person) and 0.3 L/s per square meter of floor space (0.06 CFM/sqft); outdoor air requirements can be satisfied by opening windows and doors.

kkkkkkk. Latrine/Bathroom Exhaust– 85 CMH (50 CFM) per toilet, urinal, and shower head.

lllllll. Building Pressurization: 1.3 mm W.G. (0.05 in W.G.); Maintain negative pressure in latrine areas.

### NEW AIR COOLING & HEATING EQUIPMENT

Environmental control of the facilities shall be achieved by HVAC equipment as listed below and approved by the U.S. Government. Unless otherwise noted, the Contractor may choose any combination of equipment to achieve the inside design conditions specified for the floor plans that is the most Life Cycle Cost Effective to the government. Contractor shall size and select equipment based on equipment manufacturer's performance data at the project site elevation and ensures the equipment's performance meets the design heating and cooling sizing requirements.

Facility Type	Cooling	Heating	Type of HVAC System	Remarks
Toilets/Shower/ Laundry	None	20C 68 F	Unit Heaters	Provide adequate ventilation
Guard House/QRF	25.6C 78 F	20C 68 F	Split pack heat pump	Unit heaters for heating only
Guard Tower	25.6C	20C	Split pack heat pump	Unit heaters for heating only

	78 F	68 F		
--	------	------	--	--

## **UNITARY (DUCTLESS SPLIT-PACK) HEAT PUMP UNITS**

Unitary ductless split-pack heat pump units shall be provided for small and isolated rooms, such as the guard tower, guard shed and remote small buildings. Ductless split units shall be unitary in design and factory manufactured ready for installation. Heat pump units shall provide cooling during summer and heating during winter. Heat pump units shall be suitable for low ambient operation. Interior evaporator fan coil units shall consist of a DX coil, blower, and washable filter all mounted in a housing finished for exposed installation. Cooling coil condensate piping shall route to and discharge to the sanitary sewer system. The exterior condensing units shall contain compressor, condenser coil, and all controls/fittings enclosed in a weatherized housing. Outdoor condensing unit shall be wall-mounted on steel supports or on a concrete pad. Copper refrigerant suction and liquid piping shall be sized, insulated and installed in accordance to unit manufacture recommendations. Unit temperature control shall include wall mounted adjustable thermostat, blower on-off-auto switch and heating-cooling change over control.

## **DUCTWORK**

Ductwork shall be limited to the ducted exhaust systems as required. Ductwork shall be constructed of galvanized steel or aluminum sheets and installed as per SMACNA "HVAC Duct Construction Standards (Metal and Flexible)." Flexible non-metallic duct may be used for connection from the main exhaust duct to the exhaust registers. These flexible duct run-outs shall be limited to 3 meters in length.

## **REGISTERS & GRILLES**

Registers and grilles shall be factory fabricated of steel or aluminum. The devices shall be round, square, rectangular, linear, or with perforated face as determined by the design. Pressure loss through the register and ducts shall be considered in sizing the duct system and the system static pressure calculations.

## **WALL PENETRATIONS**

Building wall penetrations shall be carefully made so as not to deteriorate the structural integrity of the wall system. The Contractor shall consult with the building manufacturer, if possible, to determine the best way to penetrate the wall. If the building manufacturer is not available, a structural engineer shall be consulted. In either case, the recommendations of the engineer shall be strictly adhered to.

## **AIR FILTRATION**

All supply air shall be filtered using manufacturer's standard washable filters mounted inside the unit. In addition, all outdoor air intakes shall be equipped with 50 mm (2 inch) thick washable filters.

## **CONTROL WIRING AND PROTECTION DEVICES**

Control wiring and protection of the air conditioning units being offered must be the manufacturer's standard, pre-wired, installed in the unit at the factory or as recommended.

## **VENTILATION AND EXHAUST SYSTEMS**

All fans used for building ventilation and exhaust shall be selected for minimum noise level generation. All exhaust fans shall be centrifugal forward curved, backward inclined, or airfoil fans with non-overloading characteristics of high efficiency and quiet running design. The fans shall be of the heavy-duty type with durable construction and proved performance in a desert environment. Each wall exhaust fan shall be provided with motorized or gravity dampers which close automatically when the fan is not running. Each ventilation or intake air fan shall be provided with an interlocked motorized damper which closes automatically when the fan is not running and shall be sized for and provided with filter and insect screen. Also, each fan shall be complete with vibration isolator, external lubricators, and all accessories and sound attenuators as necessary.

Supply intake or makeup air openings for exhaust fans shall be provided with motorized dampers which are interlocked with the exhaust fans and provided with air filters and insect screens. The motorized dampers shall open or close when the exhaust fan is on or off respectively. Louvered intake openings (for exhaust fan system) shall be sized for a maximum static pressure (SP) drop (that includes filter resistance) of 25 Pa (0.10 inches of H<sub>2</sub>O) to prevent excessive negative pressurization of the building.

To reduce sand and dirt migration, outside air intakes shall be installed as high as possible within architectural constraints or a minimum of 1.5 meters above the ground. The intakes for gravity or natural ventilation type systems shall be sized so that the free air velocity is below 2.5 m/s (500 fpm).

Toilet and Wash Area: Minimum exhaust ventilation shall be the largest of 35 m<sup>3</sup>/h / m<sup>2</sup> floor or 85 m<sup>3</sup>/h / toilet (WC). At extreme cold in winter these values can be reduced for short periods to 10 m<sup>3</sup>/h / m<sup>2</sup> or 40 m<sup>3</sup>/h / toilet (WC) to conserve heat. Provide two speed fans.

## **ELECTRIC HEATERS**

Electric heat trace cable for freeze protection shall not be provided as a substitute for space heating system.

### **UNIT HEATER**

Electric resistance unit heaters shall be installed in spaces where only heating is required. Generally, unit heaters shall be mounted as high as possible. Unit heaters shall be of the industrial grade, very durable and securely fastened to the ceiling, wall or structure. Provide a self-contained electric heating unit, suspended from ceiling or structure, fan with at least two-speeds and heating elements. Provide control-circuit terminals and single source of power supply with disconnect. Heating wire element shall be nickel chromium. Include limit controls for overheat protection of heaters. Provide hard-wired tamper resistant integral thermostat located as indicated on the drawings.

### **CABINET OR CONVECTOR HEATER**

Use of cabinet heaters shall be limited to spaces requiring heating and is not subject to misuse or abuse. Use of cabinet heaters is allowed only as directed by the User. Provide a self-contained electric heating unit, recessed mounted in wall or structure, [fan with at least two-speeds,] and heating elements. Provide control-circuit terminals and single source of power supply with disconnect. Heating wire element shall be nickel chromium. Include limit controls for overheat protection of heaters. Provide tamper resistant integral thermostat.

## **SUBMITTALS**

The Contractor shall submit the following for the equipment to be provided under this section of the specification: manufacturer's data including performance characteristics at design conditions; manufacturer's certificate stating that each unit will perform to the conditions stated, catalog cuts showing dimensions, performance data, electrical requirements, compliance with standards as stated in paragraph CODES, STANDARDS AND REGULATIONS; complete shop drawings indicating location and installation details.

The manufacturer shall also submit a 2 year warranty for each of the units.

## **TEST ON COMPLETION**

After completion of the work, the Contractor shall demonstrate to the Contracting Officer that the installation is adjusted and regulated correctly to fulfill the function for which it has been designed. The Contractor shall test, adjust, balance and regulate the section or sections of concern as necessary until the required conditions are obtained. Coordinate with the Contracting Officer on when the test shall be scheduled. Include tests for all interlocks, safety cutouts and other protective device to ensure correct functioning. All such tests shall be carried out and full records of the values obtained shall be prepared along with the final settings and submitted to the Contracting Officer in writing.

The following tests and readings shall be made by the Contractor in the presence of the Contracting Officer and all results shall be recorded and submitted in a tabulated form.

mmmmmmmm. Ambient DB and WB temperatures

nnnnnnnn. Room Inside Conditions:

- ix. Air flow supply, return and/or exhaust

oooooooo. Following readings shall be made:

- x. Total CMH (CFM) exhausted by each exhaust fan
- xi. Motor speed, fan speed and input ampere reading for each fan

pppppppp. Electric Motors: For each motor:

- xii. (1) Speed in RPM
- xiii. (2) Amperes for each phase
- xiv. (3) Power input in KW

## **ELECTRICAL REQUIREMENTS FOR HVAC EQUIPMENT**

qqqqqqqq. Note that electrical requirements for all HVAC systems shall be designed and installed to operate on the secondary power standard required herein. The existing power distribution system may require modifications or upgrades to support the additional power required by the HVAC unit. The Contractor is responsible to field verify all the conditions and provide complete shop drawings showing any incidental power upgrades. All electrical work shall comply with the National Electric Code.

rrrrrrrr. All thermostats shall be wall-mounted. Wall-mounted thermostats shall be mounted 1.5 meters (5 feet) above the finished floor and be easily accessible. Operation of the control system shall be at the manufacturer's standard voltage for the unit.

ssssssss. The following are the minimum requirements for motors regarding enclosure, insulation and protection:

- xv. Compressor Hermetic: Provide inherent (internal) overload protection.
- xvi. Condenser: Provide internal thermal overload protection.
- xvii. Evaporator (Open Class "A") fan motor type provides internal thermal overload protection.

## **CEILING FANS**

### **CEILING FAN**

Provide 4-blade ceiling fans [at one per 40 square meters of floor space] [as indicated]. Fans shall have reversible motors. Fans shall be centered or distributed evenly throughout the room. Coordinate placement with the lighting plan to prevent conflict or casting shadows. Fan mount shall be flush, standard, or angle mount depending on ceiling height. Fan shall be mounted such that the fan blade is approximately 2.5 meters (98 inches) above the finished floor. The fan shall be provided without light kit. The finish shall be factory painted white. The controls shall be wall-mounted from either a single pole switch or from two (2) 3-way switches to provide on/off operation. The electrical supply shall be [230 volts, single phase, and 50 hertz] [as indicated]. Install per manufacturers' instructions.

## **SUBMITTALS**

The Contractor shall submit the following for the equipment to be provided under this section of the specification: manufacturer's data including performance characteristics at design conditions; catalog cuts showing dimensions,

performance data, electrical requirements, compliance with standards as stated in paragraph CODES, STANDARDS AND REGULATIONS; drawings indicating location and installation details.

## **PLUMBING**

### **GENERAL**

The Contractor shall design and build domestic cold and hot water systems, waste, drain and vent systems system required in the facilities identified in Section 01010 Scope of Work and as described herein. The work covered in this scope also includes the delivery to site, erection, setting to work, adjusting, testing and balancing and handing over in full operating condition all of the plumbing equipment and associated plumbing works.

### **SUB-CONTRACTORS QUALIFICATIONS**

The plumbing systems shall be executed by a plumbing specialist subcontractor experienced in the design and construction of these types of systems.

### **STANDARD PRODUCTS**

All materials and equipment shall be standard product of a manufacturer regularly engaged in the manufacture of the product and shall duplicate items that have been in satisfactory use for at least two (2) years prior to bid opening.

### **CODES, STANDARDS AND REGULATIONS**

The design and installation of equipment, materials and work covered under the plumbing services shall conform to the following standards, codes and regulations where applicable except where otherwise indicated under particular clause(s). The publications to be taken into consideration shall be those of the most recent editions. Standards other than those mentioned herein may be accepted provided that the standards chosen are internationally recognized and meet the minimum requirements of the specified standards. The Contractor shall submit proof of equivalency if requested by the Contracting Officer.

IPC – International Plumbing Code

ASHRAE – American Society of Heating, Refrigeration and Air-Conditioning Engineers

ASME – American Society of Mechanical Engineers

ASTM – American Society for Testing and Materials

AWS – American Welding Society

### **PLUMBING SYSTEMS REQUIREMENTS**

#### **WATER**

Domestic cold and hot water shall be provided in the facilities to serve the water usage and plumbing fixtures provided for the facility. Water service to each facility shall enter the building in a mechanical, toilet, storage, or similar type space. The building service line shall be provided with a shut off valve installed either outside in a valve pit or inside the mechanical room or similar spaces. Water piping shall not be installed in or under the concrete foundation except for the service line. All water piping shall be routed parallel to the building lines and concealed in all finished areas. Insulation shall be provided where required to control sweating of pipes or to provide protection from freezing. Electric heat trace cable for freeze protection shall not be provided as a substitute for space heating systems.

## PIPING MATERIALS

Domestic cold water shall be distributed by means of standard weight (schedule 40) galvanized steel pipe, Polyvinyl Vinyl Chloride (PVC) or Polyethylene (PE) (ASTM D 2737) plastic piping. Domestic hot water shall be distributed by means of standard weight (schedule 40) galvanized steel pipe, or Chlorinated Polyvinyl Vinyl Chloride (CPVC) piping. Waste and vent piping can be made of either galvanized steel pipe (schedule 40), or Polyvinyl Vinyl Chloride (PVC) conforming to ASTM D 2665. Corrosion protection shall be provided if galvanized piping comes in contact with earth or masonry floors, walls or ceilings.

## PLUMBING WATER FIXTURES

The following typical plumbing fixtures shall be provided:

ttttttt. Eastern Water Closet with flush tank assembly. Provide acid resisting fired porcelain enameled cast iron water closet complete with rotating No-Hub 'P' trap and No-Hub coupling to meet piping requirements. Eastern Style water closet shall be furnished with integral non-skid foot pads and bowl wash down non-splashing flushing rim. The water closet shall be completely self supporting requiring no external mounting hardware and shall be flush with floor. The Eastern Style water closet shall incorporate waterproofing membrane flashing flange. Provide a cold water spigot 300mm above finished floor on the right (from a perspective of standing inside of the cubicle and looking out) sidewall of the cubicle. Spigot shall have a flexible hose and spray nozzle such that the occupant can wash over the water closet. Toilets shall be oriented north and south. Toilets shall not face east or west.

uuuuuuuu. Western style toilets with flush tanks shall be provided as requested by the User. Western style toilets shall be white vitreous china, siphon jet, round bowl, pressure assisted, floor mounted with floor outlet. Top of toilet seat height shall be 356 to 381 mm. Water closet shall be flush tank type. [Provide a cold water spigot 300mm above finished floor. Spigot shall have a flexible hose and spray nozzle.]

vvvvvvvv. Lavatories. All sinks shall be the [trough type constructed of concrete with ceramic tile exterior and lining capable of withstanding abuse. Provide maintenance access to waste piping and P-traps from under the sink.

wwwwwww. Sink Faucets. Faucets shall be chrome plated brass or bronze alloy with hot and cold water valves for manual mixing. Faucet handles shall be chrome plated brass or bronze alloy and non-lever type. **No goose neck faucet fixtures shall be used.**

xxxxxxx. Janitor's Sink. Floor mounted sink, enameled cast iron with copper alloy rim guard. Provide hot and cold water valves with manual mixing. Faucet handles shall chrome plated brass or bronze alloy. Include a stainless steel shelf and three mop holders.

yyyyyyyy. Shower. Showerhead and faucet handles shall be chrome plated brass or bronze alloy. Provide hot and cold water valves for manual mixing. In addition to a shower head, provide each shower stall with a threaded faucet approximately 1.2 m AFF with hot and cold-water controls, mixing valve and a diverter type valve so water can be directed to either the shower or to the lower faucet. Shower shall be provided with low flow shower head. The shower head shall be heavy duty type and securely fastened to the wall.

zzzzzzzz. Kitchen Sink. Single bowl [Two (2) compartments] sink shall be corrosion resisting formed stainless steel. Faucet bodies and spout shall be chrome plated brass or bronze alloy. Handles, drain assembly, and stopper shall be corrosion resisting steel or brass/bronze alloy.

aaaaaaaa. Ablution Trench. See building floor plans for size and construction of trench and number of stations. Provide trench drain with brass grating and strainer. Provide each station with hot and cold water valves with manual mixing. Faucet handles shall be copper alloy.

bbbbbbbbb. Floor Sink (P-13). Provide floor sink, circular or square, with 300mm overall width or diameter and 250mm nominal overall depth. Floor sinks shall be constructed out of concrete.



cccccccc. Floor or Shower Drain: Cast iron construction with galvanized body, integral seepage pan, and adjustable perforated or slotted chromium plated bronze, nickel-bronze, or nickel brass strainer consisting of a grate and threaded collar. Toilet room floor drains are similar except are provided with built-in, solid, hinged grate.

dddddddd. Room hose bibs and floor drains shall be provided as required. Afghan dining facility kitchen area clean-up hose bib to be supplied with connecting hose on reel including approximately 12 meters of hose. Provide clean-up spray nozzle with hose assembly.

eeeeeeee. Provide P-Traps per International Plumbing Code IPC for all fixture drains, floor and trench drains, and shower drains. P-traps shall have minimum of 50 mm water seal.

## **HOT WATER**

Hot water shall be provided for the facility to supply 49°C (120°F) hot water to fixtures and outlets requiring hot water. Hot water of a higher temperature shall be provided only where required for special use or process. Hot water piping shall be routed parallel to the building lines and concealed within finished rooms. All hot water piping shall be insulated. A hot water re-circulating pump shall be provided if hot water piping run exceeds 30m.

## **HOT WATER HEATERS**

The hot water shall be generated by electric water heaters. The unit(s) shall be typically located inside a mechanical room, storage room, toilet/janitor room or similar type space and be wall-mounted or be floor-mounted on a 100 mm (4 inch) raised concrete pad. The unit(s) shall be of the commercially available tank type having low or medium watt density electric heating elements.

In cases where the pressure of the water coming into the tank will violate manufacturer recommendations, a pressure reducer shall be installed in the line before the water heater. Each water heater shall be equipped with a vacuum relief valve and temperature and pressure (T&P) relief valve that discharge into a nearby floor drain; discharge piping shall terminate 50 mm (2 inches) above the floor drain. Multiple water heaters shall be connected by common inlet and outlet manifolds to ensure equal flow and drawdown rates.

## **WASTE, DRAIN, AND VENT SYSTEM**

Floor drains shall be provided in each room that contains a water source. Floor drains shall be provided in the mechanical equipment and toilet rooms as required. Floor drains shall be provided next to the electric water heaters. In mechanical rooms, floor drains shall be provided to avoid running drain piping long distances above or over the floor. All waste and vent piping shall be provided in accordance with the latest edition of IPC. Drain outlet shall use p-trap system to trap sewer gases. P-trap drain should be a one-piece system without removable parts.

Every trap and trapped fixture shall be vented in accordance with the IPC. In order to minimize vent piping, consider incorporating circuit venting or combination drain and vent systems in accordance with Section 911 and 912 of the IPC. IPC Section 708.3 states that cleanouts be provided no more than 100 feet apart measured from the upstream entrance of the cleanout. AED standard is to provide cleanouts at 25 feet intervals due to the nature of Afghans plugging up the drains and the limitation of the cleanout routers available in Afghanistan

## **ABOVEGROUND STORAGE TANKS**

Provide fuel storage systems as specified in the Task Order. The number, orientation (vertical or horizontal), and size of tanks shall be as shown or specified. The type and quantity of fuels to be stored shall be as specified. Tanks shall be complete with fill tube and cap, suction tube, tank gauge, vent, and other fittings and appurtenances required for full and safe operation. Tanks shall have overfill protection devices and remote overfill alarm. Tanks shall be provided with support saddles, platform/stair, concrete pad and leak spillage containment provisions. Fuels shall be transferred from the storage tanks by transfer pumps located within the fuel dispensing units. Fuel piping shall be fiberglass for underground and steel for piping located above grade. Underground piping shall be provided with either double-wall fiberglass outer pipe, double-wall steel outer pipe with cathodic protection, or a concrete secondary containment trench with removal covers and applied POL-resistant coating. The secondary containment

vault shall be sized to contain 110% of the total fuel in the largest tank. Coordinate site design and route all contaminated drainage water from the fuel dispensing pad through an oil/water separator.

#### **TANK SECONDARY CONTAINMENT WITH SPILL VALVE**

Provide secondary containment for all aboveground storage tanks. The secondary containment vault shall be watertight and shall be constructed of reinforced concrete walls and floor. The vault shall be sized to contain 110% of the total fuel in the largest tank. Sides of the vault shall be a minimum of 200mm (8in). Floor of the vault shall slope evenly to the spill valve pit. Valve operator shall be accessible from outside the vault. Spill valve and piping shall be steel. Coordinate site design and route all contaminated drainage water from the fuel dispensing pad through an oil/water separator.

#### **TANK SECONDARY CONTAINMENT WITH SPILL VALVE AND EXTENDED SECURITY WALLS**

Provide secondary containment for all aboveground storage tanks. The secondary containment vault shall be watertight and shall be constructed of reinforced concrete walls and floor. The vault shall be sized to contain 110% of the total fuel in the largest tank. Sides of the vault shall be a minimum of 200mm (8in). Floor of the vault shall slope evenly to the spill valve pit. Valve operator shall be accessible from outside the vault. Spill valve and piping shall be steel. Coordinate site design and route all contaminated drainage water from the fuel dispensing pad through an oil/water separator. The portion of the secondary containment which is integral to the perimeter wall shall be vertically extended to match the prescribed height of the security wall.

#### **REFUELING POINT SECONDARY CONTAINMENT**

Provide fuel storage and distribution systems per the drawings. The number, orientation (vertical or horizontal), and size of tanks shall be as shown or specified. The type and quantity of fuels to be stored shall be as specified. Tanks shall be complete with fill tube and cap, suction tube, tank gauge, vent, and other fittings and appurtenances required for full and safe operation. Tanks shall have over fill protection devices and remote overfill alarm. Tanks shall be provided with support saddles, platform/stair, concrete pad and leak spillage containment provisions. Fuels shall be transferred from the storage tanks by transfer pumps located within the fuel dispensing units. Fuel piping shall be fiberglass for underground and steel for piping located above grade. Underground piping shall be provided with either double-wall fiberglass outer pipe, double-wall steel outer pipe with cathodic protection, or a concrete secondary containment trench with removal covers and applied POL-resistant coating. Provide separate dispensing units for diesel and MOGAS. Each dispensing unit shall be equipped with dual nozzles and key control. Fuel dispensing unit shall be installed on an island such that two vehicles can simultaneously fuel on either sides of the dispensing unit. The secondary containment vault shall be sized to contain 110% of the total fuel in the largest tank. Coordinate site design and route all contaminated drainage water from the fuel dispensing pad through an oil/water separator.

#### **VEHICLE REFUELING POINT WITH PUMP**

Provide fuel storage and distribution systems as specified for each Task Order. The number, orientation (vertical or horizontal), and size of tanks shall be as shown or specified. The type and quantity of fuels to be stored shall be as specified for each Task Order. Tanks shall be complete with fill tube and cap, suction tube, tank gauge, vent, and other fittings and appurtenances required for full and safe operation. Tanks shall have overfill protection devices and remote overfill alarm. Tanks shall be provided with support saddles, platform/stair, concrete pad and leak spillage containment provisions. Fuels shall be transferred from the storage tanks by transfer pumps located within the fuel dispensing units. Fuel piping shall be fiberglass for underground and steel for piping located above grade. Underground piping shall be provided with either double-wall fiberglass outer pipe, double-wall steel outer pipe with cathodic protection, or a concrete secondary containment trench with removal covers and applied POL-resistant coating. Provide separate dispensing units for diesel and MOGAS. Each dispensing unit shall be equipped with dual nozzles and key control. Fuel dispensing unit shall be installed on an island such that two vehicles can simultaneously fuel on either sides of the dispensing unit. The secondary containment vault shall be sized to contain 110% of the total fuel in the largest tank. Coordinate site design and route all contaminated drainage water from the fuel dispensing pad through an oil/water separator.

## **TESTING AND COMMISSIONING**

The Contractor shall test all piping systems in accordance with IPC International Plumbing Code. The final test shall include a smoke test for drainage and vent system and pressure test for the domestic water piping. After completing the work, the Contractor shall demonstrate that all plumbing systems operate to fully satisfy the function for which these systems have been designed. The Contractor shall test, adjust, balance and regulate the system and its controls as necessary until the required designed conditions are met. The Contractor shall include tests for interlocks, safety cutouts and other protective devices to demonstrate safe operation. All such tests shall be carried out in the presence of the Contracting Officer and full written records of the test data and final settings shall be submitted to the Contracting Officer. After all tests are complete, the entire domestic hot and cold water distribution system shall be disinfected. The system shall not be accepted until satisfactory bacteriological results have been obtained.

## **FIRE PROTECTION**

### **PORTABLE FIRE EXTINGUISHERS**

ELEC Portable fire extinguishers shall be provided inside all facilities and at exterior locations as required in accordance with NFPA 10. Generally, extinguishers will be of the multi-purpose dry chemical type except for occupancies requiring a special type extinguisher (e.g., carbon dioxide portable fire extinguishers for electrical rooms).

## **ELECTRICAL**

### **GENERAL**

Contractor shall design and construct all electrical systems for the facilities to be provided. This includes design, construction, all necessary labor, equipment, and material for a fully functional system.

### **DESIGN CRITERIA**

#### **APPLICABLE STANDARDS**

ffffff. Design shall be in the required units as stipulated herein.

ggggggg. Conflicts between criteria and/or local standards shall be brought to the attention of the Contracting Officer for resolution. In such instances, all available information shall be furnished to the Contracting Officer for approval.

hhhhhhh. All electrical systems and equipment shall be installed in accordance with the requirements set forth in the documents referenced herein.

iiiiiii. Acceptance Testing: Contractor shall develop and submit for approval complete acceptance test procedures on all systems provided. As a minimum the testing procedures shall comply with the requirements of the National Fire Protection Association (NFPA) and the International Electrical Testing Association Inc. (NETA).

## **MATERIAL**

### **GENERAL**

Unless noted otherwise, all material used shall be in compliance with the requirements of UL standards. In the event that UL compliant materials are not available, Contractor may then select applicable British Standards (BS), IEC, CE, CSA, GS, DIN listed material (or equivalent), but the contractor must prove equivalence and must provide the government with a full copy of the relevant specification(s)/standard(s). Material and equipment installed under this contract shall be for the appropriate application and installed in accordance with manufacturers recommendations.

Equipment enclosure types shall be in compliance with the National Electrical Manufacturer's Association (NEMA) or the International Electro-Technical Committee (IEC) standards.

Major components of equipment shall have the manufacturer's name, address, type or style, voltage and current rating, and catalog number on a non-corrosive and non-heat sensitive plate, securely attached to the equipment. All equipment delivered and placed in storage, prior to installation, shall be protected from the weather, humidity and temperature variation, dirt and dust, and any other contaminants. All equipment shall be in new condition, undamaged and unused.

### **STANDARD PRODUCT**

All material and equipment shall be a standard product of a manufacturer regularly engaged in the manufacture of the product and shall essentially duplicate items that have been in satisfactory use for at least two (2) years prior to bid opening.

### **DESIGN CONDITIONS**

All equipment shall be rated and designed for the maximum ambient temperature and altitude of the construction site. Equipment that is altitude and temperature sensitive, such as generators, shall be derated according to the manufacturer's recommendations. Generic derating criteria for altitude and for ambient temperature may be used to approximate the required size of such equipment during the design phase, but a stipulation shall be placed on the construction plans to adjust the size according to the derating criteria specific to the manufacturer's equipment chosen before the equipment is ordered.

### **RESTRICTIONS**

Aluminum conductors shall not be specified or used except as bare steel reinforced (ACSR) overhead conductors in an aerial primary distribution system. Aluminum windings shall not be used in transformers.

### **DESIGN REQUIREMENTS**

#### **ELECTRICAL DISTRIBUTION SYSTEM**

Contractor shall connect to local electrical distribution system (utility) power.

The contractor shall provide generator power as described in the paragraph **Generator Power System**.

The contractor shall provide a prime power distribution system to distribute power to the site's facilities and other loads as required. The distribution system shall be underground

The underground distribution system shall be in direct buried schedule 80 ductbanks, except for under roadways and heavy traffic areas, with the ducts not less than 1220mm below grade. Manholes and handholes shall be provided at changes of direction of more than 40 degrees and elsewhere as required to limit the pulling tension and sidewall pressure on the cables during installation to acceptable levels as defined by the cable manufacturer.

Manholes shall be provided for ductbanks with more than 2 ducts. Handholes shall be provided wherever a manhole is not required by quantity of ducts or by cable manufacturer's installation recommendations.

Underground ducts shall be not less than 100mm diameter Schedule 80 PVC for non roadway and light traffic areas and concrete encased schedule 40 for roadways and heavy traffic areas.

The contractor shall expand the existing power plant building to contain the required generators and their associated switchgear for this phase of construction.

A 380V, 4 pole load bank shall be provided and sized at 40% of the combined ratings of generators that will simultaneously run. The load bank shall have automatic steps of 20% each.

Size of transformers, generators, and power feeds shall be governed by UFC 4-510-01, NFPA 99, and the NEC. In case of conflict between transformer design criteria between the above named standards, UFC 4-510-01 shall govern; in cases where UFC 4-510-01 cannot resolve the conflict, it shall be brought to the attention of the Contracting Officer for resolution.

The contractor shall provide a street lighting distribution system to supply power to the site's street lighting circuits. The street lighting system shall be underground in direct buried schedule 40 PVC not less than 50mm in diameter and not less than 660mm below grade. The street lighting ducts shall be concrete encased in areas subject to vehicular traffic, such as road crossings and parking areas.

Secondary electrical distribution system shall be 380/220 volt, 3-phase, 4 wire, 50 hertz. Design of the electrical system within facilities shall include, but is not limited to (a) interior secondary power distribution system, (b) lighting and power branch circuit and devices, and (c) fire detection and alarm system. All systems shall be designed for the ultimate demand loads, plus 25% spare capacity.

The contractor shall provide service entrance feeders from the distribution system to the service entrance equipment located inside of each facility and sized to the rating of the service entrance equipment. Service entrance equipment shall include a distribution panelboard sized to supply the total load of each facility. Service entrance feeder lengths shall be kept as short as possible to minimize voltage drop. They shall be underground not less than 1220mm below grade in concrete encased 100mm minimum Schedule 40 PVC from source. A spare conduit of equal size shall be provided.

All panelboards shall be circuit breaker 'bolt-on' type panels. Minimum size circuit breaker shall be rated at no less than 20-amperes. Circuit breakers shall be connected to bus bar(s) within the panelboards. Daisy chain (breaker-to-breaker) connection(s) are not acceptable. Indoor distribution panels shall be flush mounted in finished areas and surface mounted in unfinished areas. All circuit breakers shall be labeled with an identification number corresponding to the panel schedule. A 3-pole circuit breaker shall be a single unit and not made up of 3 single pole circuit breakers connected with a wire or bridge to make a 3-pole breaker. All branch circuit wiring shall be copper, minimum #4 mm<sup>2</sup> (#12 AWG) installed in metal conduit. Wiring shall be concealed in finished areas and surface mounted in unfinished areas. Flush mounted panels shall be provided with spare empty conduits from panel to unfinished area for future use. All panels shall be provided with a minimum of 25% spare capacity for future load growth. Power receptacles (outlets) shall be duplex type 220 V, 50 hertz, type CEE 7/7 with Earth Ground rated for 20A or better and shall be compatible with the required secondary power. All splicing and terminations of wires shall be performed in junction or device boxes. Proper wire nuts/connectors shall be used for splicing wire. No twist-wire connections with electrical tape wrapped around it shall be acceptable. All electrical installation shall be in accordance with NFPA 70 (National Electric Code). For large panels (225 Ampere and above) provide an ammeter, voltmeter and kilowatt-hour meter to monitor energy usage. Selector switches shall be provided for each meter to read all 3 phases. Receptacle locations shall be coordinated with architectural requirements.

Contractor shall design and provide circuits for all mechanical equipment and any other equipment that requires power and make the final connections.

All loads shall be coordinated to provide balanced loading. Phase imbalance at each panel shall not exceed 5%.

Voltage Drop for branch circuits shall be limited to no more than 3%; voltage drop for branch and feeder circuits combined shall be limited to no more than 5%.

All circuit breakers shall use down-stream coordination to ensure the breaker nearest a fault or overload is the first to trip.

## **GENERATOR POWER SYSTEM**

The generator power system, whether serving as the prime source or as a backup source of power, shall be configured as an N+1 system with the N representing the number of generators needed to supply the site's total load

and the +1 representing the number of additional generators of the same size required as spares. The site's total load is defined as the site's total demand load + 25% spare capacity. The generators may supply power at the utilization voltage of the facilities served or at a higher distribution voltage. Generator system shall also include a "black start" generator to supply power to the power plant until the main generator(s) come online.

Generators shall be derated as necessary for the ambient temperature and altitude of the site. Each generator shall be provided with an automatic load bank matched to 40% of its rated capacity (with load steps every 20% of the load bank's rating) to prevent the generator from "wet stacking" under low load conditions.

The generator power system shall be provided with a make-before-break, 4-pole, automatic transfer switch (ATS) rated for the capacity of the system. The ATS shall be capable of automatically and manually transferring the site's distribution system to generator power upon loss of local utility power and transferring back automatically and manually to local utility power upon its restoration.

The ATS shall be equipped with synchronizing/paralleling equipment to allow the generators to share the load of the site. When generator power is required at least one (1) generator shall be online at all times. When the site's load reaches 90% of the online generator's capacity, the standby generator(s) shall start. The generator that synchronizes first shall come online and share the load equally. When the site's load drops below 80% of the online generators' combined capacity, the generator(s) shall drop off line, one at a time, keeping a minimum of one generator operating online.

Whenever a generator starts, it shall go through a cool down cycle prior to shutdown. All relaying shall be automatically reset for automatic restart and stopping of generators as the load increases or decreases. Load sharing by the standby generator(s) shall be adjustable between 50% and 95% of the load on the online generator(s). Sequence of operation shall be PLC controlled. A properly sized main switchboard shall be provided to distribute the power produced by the generator(s) to the facilities on the site.

Generator fuel storage capacity shall be based on usage at total load for a minimum of 30 days. For fuel storage requirements, see Mechanical paragraph: Generator Fuel Storage/Distribution.

## **LIGHTING**

Design levels shall be per IES standards as a minimum. For convenience, the following lighting level table is listed. Note: all spaces listed below may not be within the work required within this contract.

Living room/Quarters	35 FC (350 Lux)
Toilets, Showers, Latrines, washrooms	20 FC (200 Lux)
Mechanical/Electrical rooms	30 FC (300 Lux)
Corridors and Stairways	20 FC (200 Lux)
Offices (private)	50 h/5 v FC (500 h/50 v Lux)
Office areas (open)	30 h/5 v FC (300 h/50 v Lux)
Kitchens (commercial)	70 h/3 v FC (700 h/30 v Lux)
Dining Areas	20 h/3 v FC (200 h/30 h Lux)
Auditoriums (assembly)	100 h (10 h Lux)
Auditoriums (social)	5 h/3 v FC (50 h/30 v Lux)
Conference	30 h/5 v FC (300 h/50 v Lux)
Video Conference	50 h/30 v FC (500 h/300 v Lux)
Armories	30 h/3 v FC (100 h/30 v Lux)
Reading (in chair-casual)	30 h/5 v FC (300 h/50 v Lux)
Reading (in chair-serious)	50 h/10 v FC (500 h/100 v Lux)
Reading (at desk-casual)	30 h/3 v FC (300 h/30 v Lux)

Reading (at desk-serious)	50 h/10 v FC (500 h/100v Lux)
Patient Rooms (general)	Per UFC 4-510-01
Patient Rooms (critical)	Per UFC 4-510-01
Egress path (incl. exterior)	10 Lux
Areas adjacent to egress path	0.5 Lux

FC = FootCandle

h = horizontal component

v = vertical component

Indoor lighting for all areas shall consist of fluorescent surface mounted light fixtures. Exterior lighting shall be HID (metal halide or high pressure sodium) as referenced. Moisture resistant/waterproof fluorescent light fixtures shall be provided in high humidity and wet areas such as latrines, showers and outside. Battery powered 'emergency' and 'exit' lights shall be provided within each building, as applicable, for safe egress during a power outage. All light fixtures shall be factory finished, complete and operational, to include but not be limited to, lens, globe, lamp, ballast etc. Industrial type fluorescent light fixtures shall not be used. Every room shall be provided with a minimum of one light switch. Light fixtures shall be mounted approximately 2.5-meters (8 feet) above finished floor (AFF) minimum. Fixtures may be pendant or ceiling mounted, depending on the ceiling type and height.

## **LIGHT FIXTURES**

Lighting fixtures shall be a standard manufacturer's product. Fluorescent surface mounted light fixtures shall be power factor corrected and equipped with standard electronic ballast(s), except in medical facilities where magnetic ballast(s) shall be required. All light fixtures shall properly operate using standard lamps available locally. Fixtures shall be fully factory wired and designed for appropriate application i.e. appropriate for that location where installed.

## **EMERGENCY "EXIT" LIGHT FIXTURES**

Emergency "EXIT" light fixture shall be provided in accordance with NFPA requirements. Fixtures shall be single or double sided as required by the location and for wall/ceiling mounting. Unit shall illuminate continuously and be provided with self-contained nickel cadmium battery pack, to operate on floated-battery or trickle charge circuit. Fixture shall operate satisfactorily for 90 minutes during a power outage. Unit shall have test/re-set button and failure indication lamp. Primary operating voltage shall be 220 volts. Lettering "EXIT" shall be color red and not less than 6 inches (150 mm) in height and on matte white background. Illuminations shall be with LEDs.

## **ABOVE MIRROR LIGHTS**

Above mirror lights shall be provided in toilet rooms.

## **EMERGENCY LIGHTING**

Battery powered emergency lights shall be provided within each building per NFPA for safe egress during power outage. Fixtures shall be provided with self-contained nickel cadmium battery pack to operate on stand-by circuit for 90-minute minimum. Unit shall have test/re-set button and failure indication lamp. Normal operating voltage shall be 220 volts. Emergency lighting fixtures shall be connected to the normal lighting system.

## **LIGHT SWITCHES**

Light switch shall be single pole. Minimum of one light switch shall be provided in every room. Lighting in large rooms/areas may be controlled from multiple switches. Three-way or four-way lighting shall be provided in all

rooms / areas with multiple entrances.

## **RECEPTACLES**

General-purpose receptacles shall be as required herein. All receptacles shall be duplex, unless otherwise specified in this section, the NEC, or other referenced standard.

Receptacles shall be placed at a maximum of 3-meter (10 feet) intervals. Areas with computer work-stations or similar equipment will have additional receptacles. Sinks will have a receptacle above, with one duplex receptacle serving two sinks that are side-by-side. Receptacles in wet/damp areas or within 1 meter (~3 feet) of sinks, lavatories, or wash-down areas shall be ground fault circuit interrupter (GFCI) type or residual current disconnect (RCD) type, with the trip setting of 10 milliamperes or less. Total number of duplex receptacles shall be limited to six (6) per 20-ampere circuit breaker.

## **CONDUCTORS**

All cable and wire conductors shall be copper. Conductor jacket or insulation shall be color coded to satisfy NEC requirements. The use of 75 or 90 degree C (minimum) terminals and insulated conductors is required. Use of higher degree C rated conductors on circuits with protective device terminals rated at a lower degree C is allowed but must be derated to the rating of the device terminals.

## **GROUNDING AND BONDING**

Grounding and bonding shall comply with the requirements of NFPA 70. Underground connections shall be exothermally welded. All exposed non-current carrying metallic parts of electrical equipment in the electrical system shall be grounded. Insulated grounding conductor (separate from the electrical system neutral conductor) shall be installed in all feeder and branch circuit raceways. Grounding conductor shall be green-colored, unless the local authority requires a different color-coded conductor. Ground rods shall be 20 millimeters (0.75 inches) in diameter and 3 meters (~10 feet) long made of copper-clad steel. Final measurement of the ground resistance shall be in compliance with the requirements of the local authority but shall not exceed 25 ohms when measured more than 48 hours after rainfall.

## **ENCLOSURES**

Enclosures for exterior and interior applications shall be NEMA Type 3S (IEC Classification IP54) and NEMA Type 1 (IEC Classification IP10) respectively.

## **FIRE DETECTION & ALARM SYSTEM**

A complete Fire Detection and Alarm System shall be provided throughout buildings where required by NFPA 101 (Life Safety Code) and installed in accordance with NFPA 72 requirements. System shall include, but not limited to, addressable Fire Alarm Control Panel (FACP), manual pull stations, horns, strobes, and smoke and/or heat detectors (with alarm verification feature). The system shall be capable of automatically transmitting the alarm signal, via telephone lines, to the local fire department/fire station or other location designated by the Contracting Officer. Fire alarm system shall be complete and a standard product of one manufacturer and shall be compatible with the existing predominant standard system in place at the installation.

## **TRANSIENT VOLTAGE SURGE SUPPRESSION (TVSS)**

Transient Voltage Surge Suppression shall be provided utilizing surge arresters to protect sensitive and critical equipment. As a minimum TVSS protection shall be provided at each panel serving electronic loads and shall be shown on the panel schedule. It is recommended that Metal Oxide Varistors (MOV) technology be used for such applications.

## **CONDUIT RACEWAY SYSTEM**

Metal conduit (EMT) system shall be complete, to include but not limited to, necessary junction and pull boxes for all surface mounted conduit systems. PVC conduit, junction and pull boxes are allowed for raceways located in masonry walls. Smallest conduit size shall be no less than 20mm (0.75 inch) in diameter. All empty conduits shall



be furnished with pull wire or cord or rope (depending on the size of conduit and length of run). System design and installation shall be per NFPA 70 requirements. Exterior conductors below grade shall be installed in concrete encased PVC conduit at a depth of 1220 millimeters.

### **CABLE TRAY RACEWAY SYSTEM**

Cable trays shall be ladder type and provided with, but not limited to, splices, end plates, dropouts and miscellaneous hardware. System shall be complete with manufacturer's minimum standard radius and shall be free of burrs and sharp edges. Nominal width of cable tray shall be 300mm (12 inch) and rung spaced at 150mm (6 inch). Nominal depth shall be 100mm (4 inch). System design and installation shall be per NFPA 70 requirements.

### **IDENTIFICATION NAMEPLATES**

Major electrical equipment, such as transformers, panelboards, and load centers, etc. shall be provided with permanently installed engraved identification nameplates.

### **SCHEDULES**

All panel boards and load centers shall be provided with a directory. Directory shall be typed written in English, Dari and Pashto

Single Line Diagram

Complete single line diagrams shall be provided for all systems installed. All major items in each system shall be identified and labeled for respective ratings. Single line diagrams for each system, installed in a clear plastic frame, shall be provided.

### **OPERATIONS AND MAINTENANCE (O&M) FOR ELECTRICAL**

jjjjjjjj. Contractor is required to provide a 12 month supply of parts for operation and maintenance of equipment according to the manufacturer's recommendations. In addition to this, the contractors shall provide an inventory of all items, location/address stored and secured, and commissioning plans.

kkkkkkkk. The O&M manuals must be provided prior to any training activities. Manuals shall be "tri-lingual" in Dari, Pashto and English.

llllllll. All control panels shall have tri-lingual name plates in Dari, Pashto and English.

mmmmmmmm. The contractor shall provide an outline of the training lesson plan (to be approved by the Government) prior to conducting training. CD recordings of training on video shall also be provided, after training is conducted.

### **COMMUNICATIONS SYSTEM**

#### **APPLICABLE SPECIFICATIONS**

The Publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by designation only.

United States Department of Agriculture, Rural Utilities Service

RUS Bulletin 1751F-643 (2002) Underground Plant Design

RUS Bulletin 1751F-644 (2002) Underground Plant Construction

RUS Bulletin 1753F-151 (2001) Construction of Underground Plant,

Parts II & III

RUS Bulletin 1753F-201 (1997) Acceptance Test and Measurements  
Of Telecommunications Plant

RUS Bulletin 1753F-208 (1993) Specifications for Filled  
Telephone Cables with Expanded  
Insulation (PE-89)

RUS Bulletin 1753F-401 (1995) Standards for Splicing Copper  
And Fiber Optic Cable (PC-2)

RUS Bulletin 1753F-601 (1994) Specifications for Filled  
Fiber Optic Cables (PE-90)

RUS Bulletin 1753E-001 (1996) RUS General Specification for Digital, Stored Program  
Controlled, Central Office Equipment, RUS Form 522.

RUS Publication IP 344-2 (2006) List of Materials Acceptable  
For Use on Telecommunications Systems of RUS Borrowers.

RUS Bulletin 345-65 (1978) Shield Bonding Connectors (PE-33)

RUS Bulletin 345-83 (1982) REA Specification for Gas Tube  
Surge Arrestors (PE-80)

RUS Bulletin 1753E-001 (1996) RUS General Specification for  
Digital Stored Program Controlled Central  
Office Equipment, (Form 522)

American National Standards Institute/Telecommunications Industry Association/Electronics Industry Association  
ANSI TIA/EIA 606-A (2002) Administration Standard for

The Telecommunications Infrastructure ANSI TIA/EIA 607-A (2002) Commercial Building Grounding (Earthing)  
and Bonding Requirements for Telecommunications

The Telecommunications Infrastructure

ANSI TIA/EIA 607-A (2002) Commercial Building Grounding (Earthing) and Bonding Requirements for  
Telecommunications

ANSI TIA/EIA 568 (2001) Commercial Building Telecommunications Cabling Standard

ANSI TIA/EIA 569-B (2004) Commercial Building Standard for Telecommunications Pathways and Spaces

ANSI TIA/EIA 758-A (2004) Customer-owned Outside Plant Telecommunications Infrastructure Standard

## **COMMUNICATION SYSTEMS DESIGN**

The communications system for this project is to be designed, supplied and constructed by the Contractor. The design and construction of the systems shall be in accordance with the references and the requirements contained herein.

## **EXTERIOR COMMUNICATION MANHOLE SYSTEM**

The contractor shall extend the existing manhole/handhole and duct system. The manholes and hand-holes shall be constructed in accordance with the contract drawings. The maximum distance between manholes and/or hand-holes

shall be 140 m (450 ft). The ducts shall be direct buried with a minimum of 1000 mm of properly tamped dirt/backfill on the top. Hand-holes shall be installed in laterals in between manholes and buildings and only where the distance between the main duct system and the building is 100 meters or more. The maximum number of ducts in a hand-hole wall shall be two, with one having four (4) inner ducts installed unless there are two buildings close by and can be fed from one handhole. In this case, four (two with inner ducts) conduits can be installed in the walls.

## **EXTERIOR CONDUIT**

The underground conduit for the manhole and duct system shall be direct buried (1 meter below surface), 100 mm DB type PVC or schedule 40, PVC. Inner ducts shall be four (4) 25mm PVC or PE inner ducts field installed in the outer-duct. The inner ducts shall be installed in the duct face and secured with properly sized duct plugs which expand to seal the duct. The ducts will be reinforced concrete encased where a road or taxi way is crossed. The ducts (inner and outer) shall be listed on the RUS list of materials acceptable for use on RUS projects. Cable racking diagrams (manhole/hand-hole butterflies) shall be provided for the manholes and hand-holes. The minimum duct configuration in the main duct system shall be a six way duct, being three conduits wide by two conduits deep (3 X 2) with two of the conduits having inner-ducts installed. Laterals off of the main duct system manhole to manhole shall be a minimum of a 4 way (2x2) with one duct having inner ducts. The duct system from the manhole/hand hole to a building with cable installed shall be a 1x 2, 100 mm PVC duct bank with one duct having inner ducts. The duct system from a manhole/hand hole to a building with allocations only shall be two (2), four inch (100mm) DB type PVC conduits stubbed out 3 meters from the manhole/hand hole. All conduits shall be terminated in ABS plastic terminators cast into the walls of the concrete structures. In manholes, all conduit windows shall be recessed.

## **EXTERIOR TELEPHONE CABLE**

The Contractor shall install copper and fiber optic cable in accordance with the references and the cable requirements listed below. The copper cable shall be 24 AWG, RUS PE89 type, foam skin polyolefin, with an outer layer of solid colored polyolefin and a copolymer coated 8 mil aluminum tape shield. The fiber optic cable shall be a single mode, RUS PE90 type, with a 6 mil, copolymer coated steel shield. The fiber shall not have any internal splices and have a maximum loss of 0.4dB/Km at 1310nm and 0.3dB/Km at 1550nm. The copper and fiber optic cable shall be installed, grounded/bonded, spliced and tested in accordance with RUS standards.

## **SPLICES**

### **COPPER SPLICES**

25 pair modules shall be used on copper splices 25 pairs or greater and discrete connectors shall be used on lesser count cable splices. The copper splice closures shall be flash tested with nitrogen in accordance with the manufacturer's recommendations before encapsulation. The encapsulant shall fill all of the splice interstices. The copper splicing connectors, bonding hardware, splice closures and encapsulant shall be on the RUS list of material acceptable for use on RUS projects, IP 344-2. Bonding and grounding shall be in accordance with the RUS standards. The copper splice closure shall be installed by the copper splicer only. The copper cable splicer (s) shall have 7 years documented unsupervised experience in the installation of the splice closure being used and 7 years experience splicing RUS type cable.

### **FIBER OPTIC SPLICES**

The fiber optic splice closure shall be equipped with splice trays that properly hold the fusion splice protectors (stainless steel rod with heat shrink tube). The splice loss shall be 0.02dB or less as measured by the fusion splicing machine and 0.2dB as measured by an OTDR. The fiber optic splice closure shall be flash tested with nitrogen in accordance with the manufacturer's recommendations and also be listed in RUS IP 344-2. All bonding hardware shall also be listed in RUS IP 344-2. Bonding and grounding shall be in accordance with the RUS standards. The fiber optic splice closure shall be installed by the fiber optic splicer only. The fiber optic cable splicer (s) shall have 7 years documented unsupervised experience in the installation of the splice closure being used and with RUS cable. The fiber optic splice shall also have a minimum of 7 years documented unsupervised experience with fusion

splicing machines and a minimum of three years with the particular make and model of the machine that will be used.

## **MAIN DISTRIBUTION FRAME**

The contractor shall route all communications to the Main Distribution Frame in the existing communications building.

## **PROTECTED ENTRANCE TERMINALS**

Building Protected Entrance Terminal, 25, 50 or 100 Pair

The PETs shall consist of an input splice chamber with punch down blocks for the copper cable pairs, a protector field for 5 pin connectors and a factory installed output punch down block terminal for each outside plant cable pair. The PET shall be listed in RUS 344-2. The station cables shall be terminated on a field installed category 5e, 110 type punch down block and jumpers shall be installed between the PET block and the field installed block to connect dial tone to the outlet.

## **PROTECTED ENTRANCE TERMINAL, 6 OR 12 PAIR**

The PETS shall consist of blocks with two well type heavy duty gas tube protector units. The six pair shall consist of three units where as the 12 pair will consist of 6 units. Every building with terminated cable shall be equipped with gas tube protectors. The station cables will be terminated on a category 5e 110 "station" block and jumpers shall be installed between the PET and the "station" block to connect dial tone to the outlet.

## **PATCH PANELS**

### **FIBER OPTIC PATCH PANELS, ALL BUILDINGS WITH DATA OUTLETS**

The fiber optic terminations shall consist of the outside plant cable being fusion spliced to single mode pigtails with factory installed SC connectors. The fusion splice shall have a splice loss of 0.02 dB or better as measured by the splicing machine and 0.2dB as measured by an OTDR. The pigtails shall have a single mode insertion loss of less than 0.35dB with the typical being 15 dB and a singlemode return loss better than -55dB. The fusion splices shall be protected by a stainless steel sleeve and heat shrink tube and placed in a splice tray. The terminations shall be contained in a wall mounted hinged door enclosure. The enclosure shall be equipped with hardware to properly store 1 meter of fiber slack. The enclosure shall be designed to handle adapter panels with three duplex SC connectors per adapter panel. The SC connectors shall have zirconia ceramic sleeves. The enclosure shall be capable of mounting four (4) adapter panels. Blank adapter plates shall be used wherever there are no fiber optic adapter panels. One duplex single mode fiber optic patch cord shall be provided for each duplex fiber optic port. The fiber patch cords shall have a mated pair insertion loss of less than 0.35dB with a typical loss of 0.15dB and a typical mated return loss of less than -55dB.

### **COPPER PATCH PANELS, CATEGORY 5E - ALL BUILDINGS WITH DATA OUTLETS**

Provide one patch panel port per data outlet plus 20% spare. The largest patch panel allowed shall be 48 port and the smallest 12 port. Where the 12 port is used, it shall be a category 5e, 12 port patch panel mounted on an 89 type block frame for the station cables. The 24 or 48 port patch panel shall be mounted on a swing down bracket mounted on the backboard. Cable guides and wire management bars shall be provided. Provide one category 5e patch cord, (RJ45-RJ45) per patch panel port. The Patch cords shall meet the minimum performance requirements specified in EIA/TIA-568B.1, EIA/TIA-568B.2 and EIA/TIA-568B.3.

## **OUTSIDE PLANT CABLE**

The outside plant cable (cable size and cable counts) shall be engineered and installed in accordance with the referenced standards. The OSP cable engineering shall be approved at TAC before any cable is ordered. Under no circumstances will home runs from each building to the communications building be allowed; normal telephone

cable distribution engineering standards will be used, meaning that large cables will be installed from the vault splices and the cables will get smaller as the buildings are provided service.

### **SPARE CABLE PAIRS AND FIBER OPTIC STRANDS**

There shall be spare cable pairs and fiber strands in the manholes/hand holes as required ensuring that standard sized cables are used. Dead Cable pairs shall be spliced through and cleared and capped in proper connectors. The 25 pair binder grouping of the cable shall be maintained. When the smaller (6 pair or 12 pair) counts are used, the first 6 pair count or first two 6 pair counts are used, the 13th pair of the count is cleared and capped, and then the second pair counts 14th through 25 pair count will be used. Under no circumstances will a split binder count be used. The 6 strand grouping of the fiber optic cable plant shall also be maintained.

The Contractor shall provide cable (copper and fiber optic cable) count provisions, either installed in the building or allocated in cable stubs in manholes/handholes for all buildings on the site plan, (contracted buildings and future). Conduit stub outs in manholes/handholes shall be provided for all buildings on the site plan. The following buildings will either have the cables installed and terminated in the building OR have the cables allocated in the cable counts and left in the manhole/handhole cable stub out closures.

### **TELEPHONE/DATA CABLING DISTRIBUTION SYSTEM FOR EACH BUILDING**

The Contractor shall provide two telephone/data boxes per bedroom, one box on each of the long interior walls. The Contractor shall provide two telephone/data boxes per workstation. Conference rooms shall have two telephone/data boxes on each interior wall, three interior walls per conference room. Each box shall have dual RJ-45 outlets, one for telephone and one for data. Interior copper cable to each outlet shall be 4 pair, unshielded twisted pair (UTP), Category 5e or better. Each telephone/data junction box shall be fitted with two RJ-45 jacks (1-voice / 1-data). Two runs of Category 5e (UTP) or better data cable shall be installed from each junction box back to the patch panel in the communications room and labeled on both ends with room number and jack number. Contractor shall be responsible for providing one enclosed 480 mm wide, 1 800 mm tall communications equipment rack with top-mounted cooling fans and front & rear closing doors. Contractor shall provide two 480 mm 48-port patch-panel mounted in the rack. Contractor shall coordinate the location of the communications rack (first or second floor) with the Contracting Officer Representative (COR). Corps of Engineers Representative (COR) shall punch-down the Category 5e cabling at both the patch panel and at the data/communications jacks in the bedrooms/offices/workstations/conference rooms. Termination configuration shall be EIA/TIA T568B. A Corps of Engineers representative shall test each cable run and data jack after it have been installed. Two 103 mm empty conduits shall be provided from the room to the outside for to facilitate future telephone cabling installation into the building. Two additional 103 mm empty conduits shall be provided between the communications rooms of both buildings. Provide all empty conduits with a pull rope. Incoming telephone and data service is to be provided by others. Properly sized metallic conduit and cable tray shall be used as appropriate to distribute the telephone/data cabling throughout the building. Minimum conduit size shall be 20 mm inside diameter. Data/communications face plates shall be surface mounted to the wall.

### **CABLE TELEVISION SYSTEM**

A coax cable television signal distribution system shall be provided for the Main Building TV room to distribute television programming. The system equipment such as signal and amplification equipment is to be provided and installed by others. A 50 mm conduit shall be run to each room and then connect to the outside for incoming satellite television station. The incoming cabling and signal is to be provided by others. Television cable shall be RG 6 Coax distributed in conduit. Wall cable outlet connectors shall be F type. All F type connectors shall be approved by the COR. CATV system shall be terminated in the provided rack using approved patch panel.

**-END OF SECTION 01015 -**

## SPECIAL CLAUSES

### **SECTION 01060**

## **SPECIAL CLAUSES**

### **PART 1 GENERAL**

#### **1.1 PRECONSTRUCTION CONFERENCE**

##### **1.1.1 Schedule of Meeting**

At the earliest practicable time, prior to commencement of the work, the Contractor and any Subcontractors whose presence is necessary or requested, shall meet in conference with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to the details of the administration and execution of this contract. This will include but not necessarily be limited to the Contractor's Quality Control (CQC) Program, the Contractors Accident Prevention Program, submittals, correspondence, schedule, access to the work site, security requirements, interface requirements, temporary facilities and services, hazards and risks, working after normal hours or on weekends or holidays, assignment of inspectors, representations, special requirements, phasing, and other aspects of this project that warrant clarification and understanding.

##### **1.1.2 Meeting Minutes**

It shall be the responsibility of the Contractors CQC System Manager to prepare detailed minutes of this meeting and submit those minutes to the Contracting Officer for approval within three (3) workdays. Any corrections deemed necessary by the Contracting Officer shall be incorporated and resubmitted within two (2) calendar days after receipt. Upon approval of the minutes by the Contracting Officer, the Contractor shall distribute the minutes to all parties present or concerned.

#### **1.2 AREA USE PLAN**

The Contractor shall submit to the Contracting Officer, within ten (10) calendar days after award of this task order, an Area Use Plan designating intended use of all areas within the project boundaries. This plan shall include, but not necessarily be limited to the following: the proposed location and dimensions of any area to be fenced and used by the Contractor; construction plant and building installations/the number of trailers and facilities to be used; avenues of ingress/egress to the fenced areas and details of the fence installation; drawings showing temporary electrical installations; temporary water and sewage disposal installations; material storage areas; hazardous storage areas. Any areas that may have to be graveled shall also be identified. The plan shall also include a narrative description of the building structural system, the site utility system and the office or administration facilities. The Contractor shall also indicate if the use of a supplemental or other staging area is desired. The Contractor shall not begin construction of the mobilization facilities prior to approval by the Contracting Officer of the Area Use Plan described herein.

#### **1.3 CONTRACTOR'S MOBILIZATION AREA**

The Contractor will be permitted to use an area approved by the Contracting Officer within the contract limits for operation of his construction equipment and plants, shops, warehouses, and offices. The Contractor is responsible for obtaining any required additional mobilization area above that designated. The construction site shall be cleared of construction debris and other materials and the area restored to its final grade.

### **1.3.1 Contractor's Temporary Facilities**

#### **1.3.1.1 General**

All facilities within the Contractor's mobilization area shall be of substantial construction suitable for the local weather conditions. Sanitary facilities shall meet the requirements of Corps of Engineers, Safety and Health Requirements Manual EM 385-1-1. Local nationals will not be granted any privileges under this contract.

#### **1.3.1.2 Administrative Field Offices**

The Contractor may provide and maintain administrative field office facilities within the mobilization area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel.

#### **1.3.1.3 Storage Area**

The Contractor shall construct a temporary 1.8 meter (6 foot) high chain link fence around trailers and materials. The fence shall include plastic strip inserts, colored green or brown, so that visibility through the fence is obstructed. Fence posts may be driven, in lieu of concrete bases, where soil conditions permit. Trailers, materials, or equipment shall not be placed or stored outside the fenced area unless approved in writing by the Contracting Officer.

#### **1.3.1.4 Plant Communication**

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. These devices shall be made available for use by Government personnel.

#### **1.3.1.5 Appearance of Mobilization Site Facilities and/or Trailers**

Mobilization Site Facilities and/or Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair.

Trailers or other transportable structures which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the construction site until such work or maintenance has been performed to the satisfaction of the Contracting Officer.

#### **1.3.1.6 Maintenance of Storage Area**

Fencing shall be kept in a state of good repair and proper alignment. Should the Contractor elect to traverse unpaved areas which are not established roadways with construction equipment or other vehicles, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of soil onto paved or established roadways; gravel gradation shall be at the Contractor's discretion.

#### **1.3.1.7 Security Provisions**

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own facilities and equipment.

#### **1.3.1.8 Sanitation**

a. Sanitary Facilities: The Contractor shall provide portable sanitation facilities for the Contractor's use. The Contractor shall be responsible for maintaining such facilities at no expense to the Government.

b. Trash Disposal: The Contractor shall be responsible for collection and disposal of trash from the work areas and from the mobilization area. General construction debris and demolition debris shall be collected and transported by the Contractor to a location designated by the Government. Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Loose debris capable of being windblown, shall be immediately placed in sealed or covered containers to prevent it from being blown onto taxiways or runways. Any dirt or soil that is tracked onto paved or surfaced roadways shall be cleaned daily. Materials resulting from

demolition activities that are salvageable shall be stored within the fenced area described above. Stored material not indoors, whether new or salvaged, shall be neatly stacked when stored.

#### **1.3.1.9 Telephone**

The Contractor shall make arrangements to install and pay all costs for telephone facilities desired.

#### **1.3.1.10 Restoration of Storage Area**

Upon completion of the project and after removal of mobilization facilities, trailers, materials, and equipment from within the fenced area, the fence shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse unpaved areas shall be removed and all such areas restored to their original conditions.

### **1.3.2 Protection and Maintenance of Traffic**

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the Host Nation and base authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with base traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

#### **1.3.2.1 Use of Existing Roads as Haul Routes**

The Contractor shall be responsible for coordinating with the base authorities for use of any existing roads as haul routes. Construction, and routing of new haul roads, and/or upgrading of existing roads to carry anticipated construction traffic shall be coordinated with the Base authorities and is the sole responsibility of the Contractor.

#### **1.3.2.2 Employee Parking**

The Contractor's employees may be allowed parking on the military installation. The Contractor is responsible for transporting workers (local nationals) from off post to the worksite, coordinating security identification screening, and cooperating in gate searches with the base authorities. The government reserves the right to terminate any and all contractor parking at any time.

### **1.3.3 Temporary Project Safety Fencing and Barricades**

The Contractor shall impose all measures necessary to limit public access to hazardous areas and to ensure the restriction of workers to the immediate area of the construction and mobilization site. The Contracting Officer may require in writing that the Contractor remove from the work any employee found to be in violation of this requirement.

#### **1.3.3.1 Barricades**

Barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night. Travel to and from the project site shall be restricted to a route approved by the Contracting Officer.



### **1.3.4 Host Nation Authorizations, Permits and Licenses**

It shall be the Contractor's responsibility to obtain such local authorizations, permits and licenses necessary to establish his quarry operations, batching operations and haul routes (See Special Clause entitled: COMPLIANCE WITH HOST COUNTRY RULES AND CUSTOMS).

## **1.4 RESPONSIBILITY FOR PHYSICAL SECURITY**

Prior to mobilization, the Contractor shall submit his proposed means of providing project security to prevent unauthorized access to equipment, facilities, materials and documents, and to safeguard them against sabotage, damage, and theft. The Contractor shall be responsible for physical security of all materials, supplies, and equipment of every description, including property which may be Government furnished or owned, for all areas occupied jointly by the Contractor and the Government, as well as for all work performed.

## **1.5 DUST CONTROL**

The Contractor shall be required to control objectionable dust in the work areas, access roadways, and haul roads by means of controlled vehicle speeds or dust palliatives. Vehicles transporting sand, cement, gravel or other materials creating a dust problem shall be covered, as directed by the Contracting Officer, or in accordance with local Laws, codes, and regulations.

## **1.6 DIGGING PERMITS**

### **1.6.1 Not Used.**

### **1.6.2 Requests for Digging Permits**

Requests for Digging Permits shall be submitted to Contracting Officer a minimum of seven (7) days prior to the start of the work activity covered by the permit. The request for a Digging Permit shall include a narrative description of the work to be performed and a detailed map of the area of the excavation clearly marking the location of all known utilities or other obstructions. If the work activity covered by the Digging Permit request also requires a utility outage, a separate request for the outage shall be submitted in accordance with the paragraph entitled CONNECTIONS TO EXISTING UTILITIES.

### **1.6.3 Preparation of Requests for Digging Permits**

Prior to submitting a request for a Digging Permit, the Contractor shall carefully review the area to be excavated to determine the location of existing utilities and other obstructions. The Contractor will review available drawings and will conduct a visual inspection of the site. The Contractor will utilize underground utility detecting devices such as metal and cable detectors to determine the location of existing utilities.

All utility lines found shall be clearly flagged or marked and the location of the utility shall be shown on the drawing to be submitted with the request for Digging Permit.

### **1.6.4 Existing Underground Utilities**

The Contractor shall exercise utmost care in researching locations of existing utilities and reducing damage to existing utilities. Any utilities damaged by the Contractor shall be promptly repaired by the Contractor. The Contracting Officer will review and approve any proposed repairs. Any damage to existing utilities will be immediately reported to the Contracting Officer and the Base Commander.

## **1.7 CONNECTIONS TO EXISTING UTILITIES**

### **1.7.1 General**

Any outage involving disruption of electrical service beyond the site area shall be requested in writing at least ten (10) days in advance of the date requested for the commencement of the outage. The

Contractor shall provide a request, detailing the type of outage needed (water, sewer, electrical, steam, etc.), the time needed to perform the work, the reason for the outage, and the known affected facilities.

The Contracting Officer shall be contacted prior to the outage to confirm the time and date. If the Contractor fails to initiate work at the approved time, the Contracting Officer may cancel the approved outage and may direct the Contractor to resubmit a new request. No part of the time lost due to the Contractor's failure to properly schedule an outage shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

#### **1.7.1.1 Performance of Work During Non-Standard Hours**

To minimize outage impact to the mission of the installation, all outages shall be scheduled on weekends or from 2100 – 0530 hours on duty days and/or as directed by Contracting Officer Representative (COR).

The period proposed for performance of the outage shall include sufficient contingencies to preclude impact to the peak working hours 0530 – 1800 hours during the workweek.

#### **1.7.1.2 Exterior Night Lighting**

Exterior night lighting shall be provided in conformance with EM-385-1-1 entitled Safety and Health Requirements Manual.

#### **1.7.2 Existing Underground Utilities**

The Contractor is provided notice that existing utilities may be present in the construction area. The Contractor shall exercise the utmost care in researching locations of existing utility lines by implementing control measures to eliminate, or reduce to a level acceptable to the Contracting Officer, the chance of damaging or destroying existing utilities.

##### **1.7.2.1 Use of Underground Utility Detecting Device**

Prior to any excavation, a metal and/or cable-detecting device shall be used along the route of the excavation. All underground utilities discovered by this method will be flagged a minimum distance of one-half (1/2) meter on each side of the location.

##### **1.7.2.2 Hand Excavation**

Hand excavation methods and special supervisory care shall be used between any flagged markers, in areas of known or suspected hazards, and in areas known or suspected to have multiple and/or concentrated utility lines or connections.

#### **1.7.3 Repair of Damaged Utilities**

The Contractor shall be responsible to repair any utilities damaged by him. The method of repair and schedule for performance of the repair shall be coordinated with, and subject to the approval of, the Contracting Officer. The repair work and any temporary work required to keep the system operational while repairs are being completed, shall be performed at no cost to the Government.

### **1.8 WATER**

The Contractor shall install and maintain necessary supply connections and piping for same, but only at such locations and in such manner as may be approved by the Contracting Officer. Water required for final testing, adjusting and balancing of HVAC systems will be furnished by the Government. Before final acceptance of systems, or facilities, all temporary connections and piping installed by the Contractor shall be removed at his expense in a manner satisfactory to the Contracting Officer.

### **1.9 NOT USED**

### **1.10ELECTRICITY (CONTRACTOR PROVIDED)**

Electrical service is not available for use under this contract; therefore all electric current required by the Contractor shall be the responsibility of the Contractor, furnished at his own expense. The Contractor shall provide diesel generators to meet his demand requirements. The means of doing so, such as by temporary distribution systems, shall be the responsibility of the Contractor. All temporary connections for electricity shall be subject to the approval of the Contracting Officer and shall comply with Corps of Engineers manual EM 385-1-1 entitled Safety and Health Requirements Manual. All temporary lines shall be furnished, installed, connected and maintained by the Contractor in a workmanlike manner satisfactory to the Contracting Officer. Before final acceptance of systems, or facilities, all temporary connections installed by the Contractor shall be removed at his expense in a manner satisfactory to the Contracting Officer.

### **1.11WORK OUTSIDE REGULAR HOURS**

If the Contractor desires to carry on work outside regular base duty hours, or on holidays (including the following U.S. holidays: New Year's Day, Martin Luther King Jr's Birthday, George Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving and Christmas), he shall submit an application to the Contracting Officer. The Contractor shall allow ample time to enable satisfactory arrangements to be made by the Government for inspecting the work in progress. At night, exterior lighting shall be provided in conformance with EM-385-1-1 entitled "Safety and Health Requirements Manual".

### **1.12SCHEDULING OF WORK IN EXISTING FACILITIES**

As soon as practicable, but in any event not later than thirty (30) calendar days after award of this task order, the Contractor shall meet in conference with the Contracting Officer, or his duly authorized representatives, to discuss and develop mutual understanding relative to the scheduling of work in and access to the existing facilities where work has to be performed under this contract, so that the Contractor's proposed construction schedule is coordinated with the operating and security requirements of the installation.

### **1.13NOT USED**

### **1.14PREPARATION OF AS-BUILT DRAWINGS (CONTRACTOR)**

#### **1.14.1 General**

Upon completion of each facility under this contract, the Contractor shall prepare and furnish as-built drawings to the Contracting Officer. The as-built drawings shall be a record of the construction as installed and completed by the Contractor. They shall include all the information shown on the contract set of drawings, and all deviations, modifications, or changes from those drawings, however minor, which were incorporated in the work, including all additional work not appearing on the contract drawings, and all changes which are made after any final inspection of the contract work. In the event the Contractor accomplished additional work that changes the as-built conditions of the facility after submission of the final as-built drawings, the Contractor shall furnish revised and/or additional drawings and drawing files as required depicting final as-built conditions. The requirements for these additional drawings shall be the same as for the as-built drawings specified in this paragraph.

#### **1.14.2 Final As-Built Drawings**

The Contractor shall update the digital contract drawing files to reflect the approved final as-built conditions and shall furnish those updated drawing files and plots of the final as-built drawings to the Contracting Officer. *As-built drawings shall include the addition of the predominant native language of the region in addition to the English language.*

- a. Only personnel proficient in the use of Computer Assisted Design and Drafting (CADD) for the preparation of drawings shall be employed to modify the contract drawing files or prepare new drawing files.
- b. Existing digital drawing files shall be updated to reflect as-built conditions. Independent drawing files containing only as-built information are not acceptable. The modifications shall be made by additions and deletions to the original drawing files, and where additional drawings are necessary, they shall be developed in individual digital files for each new drawing. All additions and corrections to the contract drawing files shall be clear and legible, and shall match the adjacent existing line work and text in type, size, weight, and style. New or revised information placed into the design files shall be placed on the levels and in the colors used for placement of the corresponding initial data. Similarly, the drawing size, title block, and general format of new drawings shall be consistent with the format established by the original drawings.
- c. In the preparation of as-built drawings, the Contractor shall remove "Bubbles" used by the Government to highlight drawing changes made during design/construction. Triangles associated with those earlier drawing changes shall be left on the drawings and the Contractor shall not add triangles to designate modifications associated with representation of the as-built condition. The revision block identification of the drawing modifications shall be left intact and the date of completion and the words "REVISED AS-BUILT" shall be placed in the revision block above the latest existing notation. Each drawing shall have the words "DRAWING OF WORK AS-BUILT" in letters 4.5 mm (3/16") high placed below the drawing title portion of the drawing title block, between the border and the trim line.
- d. The Contractor shall check all final as-built drawing files for accuracy, conformance to the initial drawing scheme and the above instructions. The Contracting Officer will review the drawings and drawing files for conformance to these standards.
- e. The Contractor shall furnish the digital as-built drawing files in the format as directed within Section 01335. The Government will only accept the final product for full operation, without conversion or reformatting, in these formats.
- f. Digital drawing files shall be furnished to the Contracting Officer on CD-ROM or other media and format as approved by the Contracting Officer. A transmittal sheet containing the name of the files, the date of creation, the CD-ROM number, and a short description of the contents, shall accompany the CD-ROM.
- g. A sample drawing shall be furnished to the Contracting Officer before delivery of final as-built drawings as a test to demonstrate compliance with the above instructions and file format compatibility with the described CADD software.
- h. One (1) complete set of the updated final Record Copy digital drawing files and one (1) paper plot or copy of the final Record drawings shall be delivered to the Contracting Officer upon completion of each facility. If upon review of the final as-built drawings, errors or omissions are found, the drawings and drawing files will be returned to the Contractor for corrections. The Contractor shall complete the corrections and return both the digital files and the as-built prints to the Contracting Officer within ten (10) calendar days.

## **1.15 CERTIFICATES OF COMPLIANCE**

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in accordance with Section 01335 SUBMITTAL PROCEDURES FOR DESIGN/BUILD. Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company involved and shall contain the name and address of the Contractor, the project name and location, description and the quantity of the items involved, and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material.

## **1.16 ACCIDENT PREVENTION**

The Contractor shall comply with all applicable Host Country laws and with such additional measures as the Contracting Officer may find necessary in accordance with CONTRACT CLAUSE 52.236-13 entitled ACCIDENT PREVENTION (NOV1991)-ALTERNATE 1 (APR 1984). Applicable provisions of the Corps of Engineers manual entitled Safety and Health Requirements Manual EM 385-1-1 will be applied to all work under this contract. The referenced manual may be obtained from the Contracting Officer at the jobsite or from the Afghanistan Engineer District at Kabul, Afghanistan.

#### **1.16.1 Accident Prevention Program**

Within fifteen (15) days after award of this task order, and at least ten (10) days prior to the accident prevention pre-work conference, four (4) copies of the Accident Prevention Plan required by the CONTRACT CLAUSE 52.236-13 entitled ACCIDENT PREVENTION (NOV 1991)- ALTERNATE I shall be submitted for review by the Contracting Officer. The Contractor shall not commence physical work at the site until the Accident Prevention Plan (APP) has been reviewed and accepted by the Contracting Officer. The APP shall meet the requirements listed in Appendix "A" of EM385-1-1. The program shall include the following: TAC Form 61 " Accident Prevention Program Hazard Analysis (Activity Hazard Analysis)" fully completed and signed by an executive officer of the company in block No. 13. The Activity Hazard Analysis is a method in which those hazards likely to cause a serious injury or fatality are analyzed for each phase of operations. Corrective action is planned in advance, which will eliminate the hazards. An analysis is required for each new phase of work. On large or complex jobs the first phase may be presented in detail with the submittal of the Accident Prevention Plan rather than presenting the complete analysis. If the plan is to be presented in phases, a proposed outline for future phases must be submitted as a part of the initial Accident Prevention Plan submittal. Accident Prevention Plans will be reviewed for timeliness and adequacy at least monthly with a signature sheet signed and dated documenting that these reviews took place. Copy of company policy statement of Accident Prevention and any other guidance as required by EM 385-1-1, Appendix A.

#### **1.16.2 Ground Fault Circuit Interrupter (GFCI) Requirement – Overseas Construction**

The Corps of Engineers Health and Safety Manual, EM 385-1-1, section 11.C.05.a. states: "The GFCI device shall be calibrated to trip within the threshold values of 5 ma +/- 1 ma as specified in Underwriters Laboratory (UL) Standard 943." A variance from USACE has been granted allowing 10 ma, in lieu of 5 ma, for overseas activities that use 220 Volts (V)/50 hertz (Hz) electrical power.

#### **1.16.3 Temporary Power - Electrical Distribution Boxes**

EM 385-1-1 section 11.A.01.a. states, "All electrical wiring and equipment shall be a type listed by a nationally recognized testing laboratory for the specific application for which it is to be used." This includes temporary electrical distribution boxes. Locally manufactured electrical boxes will not be allowed. Only manufactured electrical distribution boxes that meet the European CE requirements, with 10 ma CE type GFCIs installed shall be allowed.

Contractors shall:

- a. Make no modifications that might void any CE or manufacturer certification.
- b. Test the installed systems to demonstrate that they operate properly and provide the 10 ma earth leakage protection.
- c. Ensure GFCIs will have an integral push-to-test function. The testing shall be performed on a regular basis.
- d. Check that proper grounding is checked regularly and flexible cords, connectors, and sockets inspected before each use.

## **1.17HAZARDOUS MATERIALS**

Should the Contractor encounter asbestos or other hazardous materials, during the construction period of this contract, he shall immediately stop all work activities in the area where the hazardous material is discovered. The Contractor shall then notify the Contracting Officer; identify the area of danger; and not proceed with work in that area until given approval from the Contracting Officer to continue work activities. Hazardous material is considered to be asbestos, explosive devices, toxic waste, or material hazardous to health and safety. The Contractor shall secure the area from daily traffic until it is safe to resume normal activities.

## **1.18SPARE PARTS**

### **1.18.1 General**

The requirements of this clause are in addition to any requirements for the provision of specific spare parts to be provided by the Contractor included in Technical Provisions. The Contractor shall furnish spare parts as directed by the Contracting Officer under the provisions of this clause for all equipment for which O&M data is to be provided under Clause OPERATION AND MAINTENANCE (O&M) DATA of this contract. The term "spare parts" as used herein shall include spare parts, special tools and test equipment.

### **1.18.2 Selection of Spare Parts to be Furnished**

The Contractor shall provide master parts lists, recommended spare parts lists and lists of special tools and test equipment as a part of the equipment O&M data required by Clause OPERATION AND MAINTENANCE (O&M) DATA. The master parts list shall include the supplier's price for each part. After review of the lists, the Contracting Officer will select spare parts and furnish written direction to the Contractor indicating quantities and types of spare parts to be furnished by the Contractor. Written directions for spare parts orders may be provided on an incremental basis as reviews of O&M data submitted by the Contractor are completed but will not necessarily be issued in the sequence in which the Contractor submitted the equipment O&M data.

### **1.18.3 Procurement and Delivery of Spare Parts**

The Contractor shall procure and be responsible for delivery, receipt, handling, placing in storage, inventory, and turnover to the Contracting Officer all spare parts selected by the Contracting Officer. In addition to the recommended spare parts list required in paragraph SELECTION OF SPARE PARTS TO BE FURNISHED above, the Contractor is responsible to have one (1) year supply of manufacturer's recommended spare parts on site ready to turn over to the Contracting Officer at the time of acceptance of the facility.

#### **1.18.3.1 Shipment and Delivery**

The Contractor shall be responsible for the shipment and delivery of spare parts to the location on or near the site in Afghanistan as selected by the Contracting Officer. The Contractor shall provide all manpower and equipment required to receive and place into designated storage areas all spare parts purchased under this clause. The Contractor shall give the Contracting Officer thirty (30) calendar days notice of arrival at the site of the first shipment.

#### **1.18.3.2 Turnover of Spare Parts**

The Contractor shall notify the Contracting Officer seventy-two (72) hours prior to delivery of spare parts to the designated storage area. The Contractor and the Contracting Officer will perform a joint inventory of the spare parts and the spare parts will be turned over to the Contracting Officer. Spare parts purchased under this clause shall not be used by the Contractor.

### **1.18.3.3 Parts and Package Identification**

Prior to shipment from point of purchase, each spare part shall be tagged or otherwise marked or labeled. Such labeling may be placed or affixed to the container, box or packaging in which spare parts are located when it is not feasible to place or affix such labeling directly on each spare part. Tags or labels shall include, but not necessarily be limited to; part number, description, parent equipment name and number location, project and/or other data as directed by the Contracting Officer.

### **1.18.3.4 Preservation and Packaging Instruction**

- a. Items ordered under this contract shall be preserved and packed for a minimum of three (3) years shelf life storage. All items shall be individually packaged except when the manufacturer specifies that the items are to be used in sets. Appropriate identification labels must be affixed to the items protective box or package. After the spare parts are packaged, the manufacturer shall weigh the spare parts and packaging and place the weight and size of the packaged container on the label with other information as outlined herein. Each item, not normally identified with manufacturer's name and part number, shall have an appropriate label affixed to it with manufacturer's name and part number.
- b. Machined spare parts shall be lubricated or coated in order to withstand extensive periods of storage in a highly corrosive atmosphere.
- c. Large items (greater than 50 lbs., or larger than one cubic foot) shall be packaged in waterproof wooden boxes and properly braced. Cushioning shall be used to prevent damage to the item and to the packaging material.
- d. Solid state components, such as diodes, transistors, integrated circuits or equipment consisting of such parts that can be damaged as a result of static electricity and other stray electro-magnetic fields shall be packaged in heat-sealed, aluminum foil, laminated, flexible packages.
- e. All other spare parts shall be packaged in heat sealed plastic bags or wrap. Delicate and more fragile items such as test equipment shall be cushioned or wrapped with transparent bubble wrap material prior to being inserted into the plastic package.

### **1.18.4 Warranty**

All spare parts provided by the Contractor under this clause are subject to the general warranty clauses of this contract.

### **1.18.5 Payments for Spare Parts**

Payments for spare parts ordered under the paragraph entitled "Selection of Spare Parts To Be Furnished" will be made under the work item of the Work Breakdown Sheet entitled "Spare Parts". Payments for spare parts specifically required elsewhere in this contract shall be considered as part of those equipment costs and shall be included in other payment items as appropriate. Payments for spare parts ordered under this clause shall be based on the invoice price (FOB supplier) plus certified invoice price of surface shipment to the site in Afghanistan. The invoice price (FOB supplier) shall include the separately listed cost for preservation and packaging by the manufacturer as specified herein. The Contractor shall provide invoices and any additional backup, which may be required to demonstrate that the invoices presented represent the cost of spare parts, preservation and packaging, and cost of surface shipment to the site. Payment for handling, delivery, inventory, turnover, customs, overhead or profit shall not be paid or allowed under this Contract Provision, and shall be included in the cost for installation of this equipment under the other appropriate payment items of this contract. Price increases over prices furnished under paragraph SELECTION OF SPARE PARTS TO BE FURNISHED shall be fully substantiated. Payment for spare parts will be made after the spare parts have been accepted at the site

by the Contracting Officer. If the total payments under the work item entitled "Spare Parts" does not reduce the balance of this work item to zero, the remaining balance will be deducted from the final contract amount. If orders exceed the work item entitled "Spare Parts", a modification for equitable adjustment will be issued in accordance with Contract Clause 52.243-4 entitled CHANGES. Payments for spare parts ordered under this clause shall constitute full payment for all cost of the spare parts and associated cost of preservation and packaging, and cost of surface shipment to the site. Other ancillary costs shall be included by the Contractor under the other appropriate work items of this contract and no additional cost except as provided herein will be allowed.

## **1.19 OPERATION AND MAINTENANCE (O&M) DATA**

### **1.19.1 General**

The requirements contained herein are in addition to all shop drawings submission requirements stated in other sections of the specifications. The Contractor shall include the provisions for all items required under this clause in all purchase orders and sub-contract agreements. Submittals required hereinafter will not relieve the Contractor of any responsibilities under the Warranty of Construction Provisions of this contract or under the various Guarantee Clauses of the Technical Provisions.

### **1.19.2 Submittals**

The Contractor shall submit all items requiring submission of O&M data under this and other sections of these specifications in accordance with Section 01335 SUBMITTAL PROCEDURES FOR DESIGN/BUILD of the specifications.

### **1.19.3 Operation and Maintenance (O&M) Data**

The Contractor shall furnish operation and maintenance manuals for all facilities constructed under this contract. The manuals shall be loose leaf, indexed and shall consist of manufacturer's brochures, manufacturer's operation and maintenance manuals, service and repair manuals, catalogs, service bulletins, instruction charts, diagrams, other information as necessary to support the operation and maintenance of the end items of equipment, assemblies and systems. Each type of facility (housing, barracks, mosque, etc.) shall be covered by a separate manual (or manuals) consisting of all data pertaining to the equipment and/or systems within that facility. Identical equipment within a single major system shall require only one submittal of data. The Contractor shall furnish all O&M manuals to the Contracting Officer not less than thirty (30) calendar days prior to contract completion. Required number of submittals (number of sets) shall be as specified in Section 01335 SUBMITTAL PROCEDURES FOR DESIGN/BUILD.

### **1.19.4 Recommended Spare Parts List**

The Contractor shall furnish a recommended spare parts list containing equipment manufacturers' recommendations for five (5) years; two (2) years and one (1) year spare parts stock levels in Afghanistan. Current unit price and effective date, lead time, shelf life for each individual part, and total cost of all recommended parts shall be furnished.

### **1.19.5 Supplemental Submittals of Data**

After initial submittal of O&M manuals and until final acceptance of all equipment, the Contractor shall prepare and deliver to the Contracting Officer supplemental technical data as previously described for all changes, modifications, revisions and substitutions to equipment and components. For equipment or systems introduced into the contract under change order, or modified by change order, supplemental data shall be furnished within forty-five (45) calendar days after issuance of the change order. The supplemental data furnished shall be properly prepared and identified for insertion into the O&M manuals.



### **1.19.6 Framed Instructions for Systems**

Approved wiring and control diagrams showing the complete layout of the entire system, including equipment, piping, valves and control sequence, framed under glass or in approved laminated plastic, shall be posted, where applicable, in all mechanical equipment rooms. In addition, detailed operating instructions explaining safe starting and stopping procedures for all systems shall be prepared in typed form along with the inspections required to insure normal safe operations. The instructions shall be framed as specified above for the wiring and control diagrams and posted beside the diagram. Proposed diagrams, instructions, and other sheets shall be submitted for approval prior to posting. Operating instructions shall be posted before acceptance testing of the systems and verified during acceptance testing.

### **1.19.7 Additional Submittals/Resubmittals**

The Contracting Officer reserves the right to determine whether the above specified information, as furnished by the Contractor, is adequate and complete and to require such additional submittals by the Contractor as necessary to insure that adequate information has been furnished to provide the satisfactory operation and maintenance of the various items of equipment and to fulfill the intent of the specifications. Additional submittals or resubmittals supplementing incorrect or incomplete data shall be made within thirty (30) calendar days after receiving notice by the Contracting Officer. All costs arising from these resubmissions shall be borne by the Contractor.

## **1.20 INSTRUCTIONS AND TRAINING FOR OPERATION AND MAINTENANCE**

### **1.20.1 General**

The Contractor shall be responsible for the instruction and training of operating and maintenance personnel as specified below and in the Technical Provisions of the specifications. Unless otherwise indicated in the Technical Provisions, operating and maintenance instructions shall be given for a minimum period as follows:

Title Duration of Training

Mechanical Systems 10 Days

Electrical Systems 10 Days

### **1.20.2 Operation and Maintenance Training**

The Contractor shall provide competent instructors for training of personnel designated by the Contracting Officer to operate mechanical and electrical building systems and equipment, perform the required preventive maintenance to minimize breakdown, and to perform necessary repairs when malfunction or breakdown of equipment occurs. Such training shall consist of classroom and on-the-equipment training for the period specified, which shall be completed prior to acceptance of a system or equipment, as applicable. The instructor(s) shall have no other duties during the period of training.

Classroom instruction shall not exceed fifty percent (50%) of the total training time, with the balance devoted to on-the-equipment demonstration and familiarization. Emphasis will be given to both electrical and mechanical features, in accordance with approved training plans.

### **1.20.3 Arrangements**

The training shall be for not less than the periods of time specified, five (5) days per week, and eight (8) hours per day, subject to review and approval by the Contracting Officer. Each individual training session shall be presented one time only, shall be video taped in a television system compatible with the local area, and be scheduled in a manner acceptable to the Contracting Officer. At the completion of training, the videotapes shall become the property of the Government. In addition to the Contractor's requirements to video tape each training section, the Government reserves the right to record, in any manner, the subject training material, or training sessions given by the Contractor, without additional cost to the

Government.

Recordings obtained will be used in future training by the Government. The operating and maintenance manual data, as specified to be furnished in these Special Clauses, shall be used as the base material for training.

#### **1.20.4 Scheduling**

The Contractor shall contact the Contracting Officer for the purpose of preliminary planning, scheduling, and coordination of training, to maximize effectiveness of the training program for available operating and maintenance personnel. The Contractor shall initiate and make arrangements for such contact within thirty (30) calendar days after receipt of notification of award of contract; and shall include all significant times in scheduling and completing training in his PROJECT SCHEDULE. The Contractor shall provide a draft outline of training outline in sufficient detail to provide a broad indication of the type of scope of training to be given. It shall include but not be limited to; (a) a list of subjects to be presented; (b) estimated amounts of classroom and on-the-equipment instruction for each subject; (c) a list of minimum qualifications for instructors; and (d) discussions concerning the types and amounts of visual aids, reference materials, tools and test equipment, mock-up and other training materials that will be employed during training.

#### **1.20.5 Preliminary Plan**

The Contractor shall submit seven (7) copies of an outline of his proposed training plan to the Contracting Officer for review and approval not later than 60 calendar days after award of this task order. The plan will be reviewed and coordinated with the content of the O&M manuals.

#### **1.20.6 Plan**

The Contractor shall submit seven (7) copies of his proposed training plan to the Contracting Officer for approval not later than ninety (90) calendar days prior to start of any training. The plan shall include the following; (a) a weekly outline showing overall form and design of training presentation; (b) a day-by-day schedule showing time intervals, the major and subordinate subjects to be covered in each, the name of the instructor(s) and qualification summary of each, and identification of related handouts; (c) summary of the number of hours of classroom and on-the-equipment training; (d) a list of reference materials to be provided by the Contractor to the trainees; and (e) a list and description of the training materials to be used, such as text, visual aids, mock-up, tools, etc. The Contractor shall be responsible for furnishing all training materials except the following: The Government will provide space, chairs, and tables for classroom training, and three (3) sets of the five (5) sets of O&M Manuals required by the Contractor per Section 01335 SUBMITTAL PROCEDURES FOR DESIGN/BUILD of the specifications. Provision of these manuals is solely for reference purposes, and in no way relieves the Contractor from providing all instruction and materials necessary for training personnel designated by the Government. All costs for resubmission of training plans, training materials, etc., as requested by the Contracting Officer shall be borne by the Contractor. Resubmittals shall be made within twenty (20) days of notice from the Contracting Officer.

#### **1.20.7 Attendance Roster/TAC Form 356**

The Contractor shall develop an attendance roster or a similar document indicating each student's attendance, prior to the start of each class, subject and/or topic. This includes both "Hands-On" and classroom training. It is strongly recommended that each student trained be required to sign this document at the beginning of each class day for each and every class, subject and/or topic taught on that day. The Contractor's failure to have student attendance verified in writing may be cause for the Government to order the Contractor to repeat schooling where evidence of attendance cannot be verified. No part of the time lost due to such repeat instruction shall be made the subject of claim for extension of time or for excess costs or damage by the Contractor. Within ten (10) working days after completion of

Operation and Maintenance Training conducted in accordance with this clause and/or applicable Technical Provision section, the Contractor shall complete and submit TAC Form 356 "Operation and Maintenance Training Validation Certificate". The attendance roster shall be included as an attachment to TAC Form 356.

## **1.21 NOT USED**

### **1.22.1 General**

This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the Contract Clause 52.249-10 entitled DEFAULT (FIXED-PRICE CONSTRUCTION) APR 1984. The listing below defines the anticipated monthly unusually severe weather for the contract period and is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the geographic location of the project. The schedule of anticipated unusually severe weather will constitute the baseline for determining monthly weather time evaluations. Upon award of this task order and continuing throughout the contract each month, actual unusually severe weather days will be recorded on a calendar day basis (including weekends and holidays) and compared to the monthly anticipated unusually severe weather in the schedule below. The term "actual unusually severe weather days" shall include days actually impacted by unusually severe weather. The Contractor's schedule must reflect the anticipated unusually severe weather days on all weather dependent activities.

#### **MONTHLY ANTICIPATED UNUSUALLY SEVERE WEATHER CALENDAR DAYS**

January	4 Days
February	2 Days
March	2 Days
April thru	
December	0 Days

### **1.22.2 Time Extensions**

The number of actual unusually severe weather days shall be calculated chronologically from the first to the last day in each month. Unusually severe weather days must prevent work for fifty percent (50%) or more of the Contractor's workday and delay work critical to the timely completion of the project. If the number of actual unusually severe weather days exceeds the number of days anticipated in the paragraph above, the Contracting Officer will determine whether the Contractor is entitled to a time extension. The Contracting Officer will convert any qualifying delays to calendar days and issue a modification in accordance with the Contract Clause 52.249-10 entitled DEFAULT (FIXED-PRICE CONSTRUCTION) APR 1984.

## **1.23 STANDARDIZATION**

Where two or more items of the same type or class of product, system or equipment furnished in this project are required, the units shall be products of the same manufacturer and shall be interchangeable when of the same size, capacity, performance characteristics, and rating. The only exception to this requirement is where the items are interchangeable due to conformance with industry standards (valves, fittings, etc.); they need not be by the same manufacturer. This requirement applies to all manufactured items in the project that normally require repair or replacement during the life of the equipment.

## **1.24 COMPLIANCE WITH HOST COUNTRY RULES AND CUSTOMS**

The laws of Host Country may prohibit access to certain areas of the country that are under military control. The Contractor shall furnish the Contracting Officer the names of personnel, type, and amounts of equipment, dates and length of time required at the site, and the purpose of entering the host country. It is understood that areas to which rights of entry are provided by the Host Government are to be used only for work carried out under the contract and no destruction or damages shall be caused, except

through normal usage, without concurrence of the Host Government.

#### **1.24.1 Contractor's Responsibilities**

The following items are the sole responsibility of the Contractor to investigate, estimate as to cost, and assume the risk, as normally encountered by Contractors. The Contractor shall be responsible for determining the effect of the following on his own cost of performance of the contract and for including sufficient amount in the contract price:

- a. Official language and type of accounts required to satisfy the officials of the Local Government.
- b. Entry and exit visas, residence permits, and residence laws applicable to aliens. This includes any special requirements of the Host Government, including those required by local Labor Offices, which the Contractor may have to fulfill before an application for a regular block of visas will be accepted.
- c. Passports, health and immunization certificates, and quarantine clearance.
- d. Compliance with local labor and insurance laws, including payment of employer's share of contribution, collecting balance from employee and paying into insurance funds.
- e. Strikes, demonstrations and work stoppage.
- f. Collection through withholding and payment to local Government, of any Host Country income tax on employees subject to tax.
- g. Arranging to perform work in the Host Country, to import personnel, to employ non-indigenous labor, to receive payments and to remove such funds from the country.
- h. Operating under local laws, practices, customs and controls, and with local unions, in connection with hiring and firing, mandatory wage scales, vacation pay, severance pay, overtime, holiday pay, 7th day of rest, legal notice or pay in lieu thereof for dismissal of employees, slowdown and curtailed schedules during religious holidays and ratio of local labor employed in comparison to others.
- i. Possibility of claims in local bureaus, litigation in local courts, or attachment of local bank accounts.
- j. Compliance with workmen's compensation laws and contributions into funds. Provisions of necessary medical service for Contractor employees.
- k. Special license required by the local Government for setting up and operating any manufacturing plant in the Host Country, e.g. concrete batching, precast concrete, concrete blocks, etc.
- l. Sales within the host country of Contractor-owned materials, and equipment.
- m. Special licenses for physicians, mechanics, tradesmen, drivers, etc.
- n. Identification and/or registration with local police of imported personnel.
- o. Stamp tax on documents, payments and payrolls.
- p. Base passes for permanent staff, day laborers, motor vehicles, etc.
- q. Compliance with all customs and import rules, regulations and restrictions, including, but not limited to, local purchase requirements.

#### **1.25 Not used.**

### **1.25.1 Employee Identification**

The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work, to display identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.

#### **1.25.1.1 Preparation of Identification Badges**

The Contractor shall be required to prepare a written application inclusive color photographs and provide all materials and labor necessary to prepare an identification badge, laminated in plastic, containing the employee's name, badge number, color photo, height and weight, the name of the Contractor's organization and for requiring each employee engaged on the work to display this identification as directed by the Contracting Officer. The Contractor shall submit each application and draft badge through the Contracting Officer to the Base Security Office. A minimum of thirty-five workdays shall be allowed for Government review and certification of badges. The Base Security Office will certify each draft badge by signature, stamp, seal or any combination thereof. Upon certification by the Base Security Office, the badges will be returned to the Contractor for final preparation, lamination, and issuance. Badges shall not be taken out of country during periods of travel or absence. During such periods, the Contractor may be permitted to issue temporary identification badges.

#### **1.25.1.2 Employee Background and Historical Information**

The Contractor shall be required to prepare and maintain personal background and historical information forms on each employee. These forms may be reviewed by the Base Security Office. The required information shall include but not necessarily be limited to the following:

- a. Full name.
- b. Place and date of birth.
- c. Three (3) current color photographs.
- d. Copy of Citizenship/Nationality identification.
- e. Copy of Passport.
- f. Copy of drivers license.
- g. Police Background Check.
- h. Work History.
- i. Personal background information.
- j. Copy of Work Permit and/or Visa.
- k. Permanent home of record and in-country address.
- l. Other information mandated by local law, the Base Security Regulations or that may be required to coordinate and process the necessary documentation with the government offices responsible for the approval.
- n. Registration, insurance company, policy number and expiration date for each vehicle.

### **1.25.2 Identification of Contractor Vehicles**

The Contractor shall be responsible for requiring each vehicle engaged in the work to display permanent vehicular identification as approved and directed by the Contracting Officer. If acceptable to the Base Security Office and approved by the Contracting Officer, the Contractor may institute a system of nonpermanent temporary identification for one-time delivery and transit vehicles. Each Contractor vehicle, machine, piece of equipment, or towed trailers, shall show the Contractor's name such that it is clearly visible on both front doors of the vehicle and both sides of a towed trailer. A valid license plate shall be displayed at all times. Contractor vehicles operated on Government property shall be maintained in a

good state of repair, shall be insured, and shall be registered in accordance with Afghan Law.

### **1.25.3 Security Plan**

The Contractor shall submit to the Contracting Officer, within ten (10) calendar days after award of this task order, his proposed personnel and vehicular access plan. This plan shall cover all elements for issuance of the access passes, safeguarding of unissued passes, construction security operations, lost passes, temporary vehicle passes, and collection of passes for employee's and vehicles on 1)- temporary absence; 2)- termination or release; and 3)- termination or completion of contract. The plan shall address in detail the contractors proposed procedures, and organization necessary to produce and maintain effective security within the contract limits twenty-four (24) hours a day seven (7) days a week.

### **1.26 RADIO TRANSMITTER RESTRICTIONS**

To preclude accidental actuation of sensitive electronic equipment, the Contractor shall not use radio transmitting equipment without prior approval of the Contracting Officer.

### **1.27 Not used.**

### **1.28 PUBLIC RELEASE OF INFORMATION**

#### **1.28.1 Prohibition**

There shall be no public release of information or photographs concerning any aspect of the materials or services relating to this bid, contract, purchase order, or other documents resulting there from without the prior written approval of the Contracting Officer.

#### **1.28.2 Subcontract and Purchase Orders**

The Contractor agrees to insert the substance of this clause in all purchase orders and subcontract agreements issued under this contract.

### **1.29 ATTACHMENTS**

TAC FORM 61 - Accident Prevention Program Hazard Analysis

TAC FORM 356 - Operation and Maintenance Training Validation Certificate

-- End of Section 01060--

## **SECTION 01312 QCS**

### **SECTION 01312**

#### **QUALITY CONTROL SYSTEM (QCS)**

##### **PART 1: GENERAL**

##### **1.1 GENERAL**

The Government will use the Resident Management System for Windows (RMS) to assist in its

monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. The Contractor module, user manuals, updates, and training information can be downloaded from the RMS web site: the Contractor can obtain the current address from the Government. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Import/Export of Data

#### 1.1.1 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

#### 1.1.2 Other Factors

Particular attention is directed to specifications "SUBMITTAL PROCEDURES", "CONTRACTOR QUALITY CONTROL", "PROJECT SCHEDULE", and Contract Clause, "Payments", which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

### 1.2 QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become available. It shall be the responsibility of the contractor to maintain the QCS software and install updates as they become available.

### 1.3 SYSTEM REQUIREMENTS

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run QCS. No separate payment shall be made for updating or maintaining the necessary hardware configurations necessary to run QCS:

#### Hardware

- IBM-compatible PC with 1000 MHz Pentium or higher processor
- 256+ MB RAM for workstation / 512+ MB RAM for server
- 1 GB hard drive disk space for sole use by the QCS system
- Digital Video Disk (DVD)-Compact Disk (CD) Reader-Writer (RW/ROM)
- Monitor with a resolution of AT LEAST 1024x768, 16bit colors
- Mouse or other pointing device

Windows compatible printer. (Laser printer must have 4 MB+ of RAM)  
Connection to the Internet, minimum 56k BPS

#### Software

MS Windows 2000 or higher  
QAS-Word Processing software: MS Word 2000 or newer  
Internet browser supporting HTML 4.0 or higher  
Electronic mail (E-mail) MAPI compatible  
Virus protection software regularly upgraded with all issued manufacturer's updates

### 1.4 RELATED INFORMATION

#### 1.4.1 QCS User Guide

After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website; the Contractor can obtain the current address from the Government. In case of justifiable difficulties, the Government will provide the Contractor with a CDROM containing these instructions.

#### 1.4.2 Contractor Quality Control (CQC) Training

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class. The government will provide QCS training if requested by the contractor.

### 1.5 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by files attached to E-mail or via CD-ROM. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

### 1.6 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. Data updates to the Government shall be submitted via either E-mail or electronic media with printed/file attachments, e.g., daily reports, schedule updates, payment requests. If permitted by the Contracting Officer. The QCS database typically shall include current data on the following items:

#### 1.6.1 Administration

##### 1.6.1.1 Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver Contractor administrative data in electronic format via E-mail.

##### 1.6.1.2 Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format via E-mail.



#### 1.6.1.3 Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

#### 1.6.1.4 Equipment

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

#### 1.6.1.5 Management Reporting

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

### 1.6.2 Finances

#### 1.6.2.1 Pay Activity Data

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

#### 1.6.2.2 Payment Requests

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

### 1.6.3 Quality Control (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report.

#### 1.6.3.1 Daily Contractor Quality Control (CQC) Reports.

QCS includes the means to produce the Daily CQC Report. The Daily CQC Report generated by QCS shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the QCS-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by specification 01451 "CONTRACTOR QUALITY CONTROL".

#### 1.6.3.2 Deficiency Tracking.

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The Contractor shall maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

#### 1.6.3.3 Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

#### 1.6.3.4 Accident/Safety Tracking.

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports.

#### 1.6.3.5 Features of Work

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

#### 1.6.3.6 QC Requirements

The Contractor shall develop and maintain a complete list of QC testing, transferred and installed property, and user training requirements in QCS. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via QCS.

#### 1.6.4 Submittal Management

The Contractor shall maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using QCS. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

#### 1.6.5 Schedule

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Specification Section Project Schedule. This schedule shall be input and maintained in the QCS database either manually or by using the Standard Data Exchange Format (SDEF). The updated schedule data shall be included with each pay request submitted by the Contractor.

#### 1.6.6 Requests for Information (RFI)

The Contractor shall use the two-way RFI system contained in QCS for tracking all RFI's generated during the contract. Hard copies of all RFI's shall be provided to the government, and will govern in the event of a discrepancy between electronic and printed mediums.

#### 1.6.7 Import/Export of Data

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data, and schedule data using SDEF.

#### 1.7 IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

#### 1.8 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of updates, payment requests, correspondence and other data is by E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of computer diskettes or CD-ROM for data transfer. Data on the disks or CDs shall be exported using the QCS built-in export function.

#### 1.9 MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the Contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

#### 1.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

□ End of Section 01312 –

### SECTION 01312

#### **PROJECT SCHEDULE**

##### **1.0 GENERAL**

##### **1.1 SUBMITTALS**

The following shall be submitted for Government approval in accordance with Section 01335 SUBMITTAL PROCEDURES: SD-07 Schedules Project Schedule; Horizontal Bar Chart and Periodic Payment Request Updates; and Projected Earnings Curve and Periodic Payment Request Updates. Revisions to the Project

Schedule and Projected Earnings Curve for Modifications Issued to this Contract shall be coordinated with the Contracting Officer.

## **2.0 PRODUCTS (Not Applicable)**

## **3.0 EXECUTION**

### **3.1 GENERAL**

The Contractor shall furnish a Project Schedule as described below. The scheduling of construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Subcontractors and suppliers working on the project should also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

### **3.2 BASIS FOR PAYMENT**

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel shall result in an inability of the Contracting Officer to evaluate Contractor progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, then the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

### **3.3 PROJECT SCHEDULE**

#### **3.3.1 Schedule of Construction**

Within seven (7) calendar days after notice to proceed, the Contractor shall prepare and submit a Construction Schedule to the Contracting Officer for approval. This schedule shall address each payment line item and/or sub-line item listed in the Proposal Schedule separately.

#### **3.3.2 Non-Compliance**

Failure of the Contractor to comply with the requirements of the Contracting Officer shall be grounds for determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

#### **3.3.3 Horizontal Bar Chart**

##### **3.3.3a Format**

The required schedule shall be a cost loaded CPM network prepared using Primavera P3 or P6, or Microsoft Project 2007. It shall be displayed as a horizontal bar chart. Activity IDs and descriptions shall be listed down the left side of the page. The timescale shall run across the top of the page. Each activity shall be shown as a bar from the early start to the early finish. No page header shall be used. The page footer will contain the name of the contractor, the name of the project and the solicitation number. The schedule shall be organized using activity codes (Primavera) or custom outline codes (MS Project). The activity code dictionary must include a code field for Bid Item with code values corresponding to the line items on the Proposal Schedule. The drag-and-drop and indent features shall not be used to organize a schedule created with MS Project.

##### **3.3.3b Calendars**

Three calendars shall be used:

- ☐ 7 day week for design and procurement
- ☐ 6 day workweek with Afghan public holidays for interior work
- ☐ 6 day workweek with Afghan public holidays and severe weather allowance for exterior work

### **3.3.3c Network Logic**

The schedule must be logic driven. All activities must have at least one predecessor and one successor. Start-to-start and finish-to-finish may not be used unless the start or finish of an activity truly restrains the start or finish of the succeeding activity.

### **3.3.3d External Constraints**

External constraint dates may not be used except for two milestones: NTP (start milestone, start-no-earlier-than) and Contract Complete (finish milestone, finish-no-later than).

### **3.3.3e Reports**

Two report formats are required:

1. Activities grouped in a logical phases of work, sorted by early start and early finish
2. Activities grouped by bid item and phase with bid item and project totals

### **3.3.4 Cost**

Listed with each work item shall be a corresponding cost representing the total cost, such as material, labor, equipment, and overhead associated with that item. The total cost of the work items shall be equal to the Bid Price for that sub-line item of the Proposal Schedule.

### **3.3.5 Scheduled Project Completion**

The schedule interval shall extend from Notice-To-Proceed to the contract completion date.

### **3.3.6 Projected Earning Curve**

Submitted with the Construction Schedule shall be a Projected Earning Curve. The Projected Earning Curve is a plot of the Contractor's earnings on the vertical axis and the contract duration on the horizontal axis. The earnings figure shall relate to the complete value of the contract and need not reflect each facility separately.

### **3.3.7 Construction Schedule**

The Construction Schedule shall be on one page with a maximum dimension of 90 cm by 120 cm. The Contractor shall submit the Projected Earnings Curve on the same page. The initial submittal shall include one (1) reproducible and four (4) copies, one (1) copy of which will be returned to the Contractor when approved.

### **3.3.8 Submission With Partial Payment Estimate**

Each time the Contractor submits a payment request under this contract he shall also submit three (3) copies of the Bar Chart. The Bar Chart shall be annotated by indicating the percent complete for each activity directly on the bar. The Projected Earnings Curve shall be annotated by plotting actual earnings versus time on the same graph. Those work items reflecting performance which is behind schedule by fifteen (15) calendar days or more shall be fully explained in detail giving the reason for delay and the Contractor's plan for timely completion within the schedule.

### **3.3.9 Modifications**

The Construction Schedule and Projected Earning Curve shall be revised to reflect any and all modifications issued to this contract as they are issued. Format and numbers of copies as defined in paragraph CONSTRUCTION SCHEDULE shall be submitted for approval by the Contracting Officer.

### **3.4 PERIODIC PROGRESS MEETINGS**

Progress meetings to discuss payment shall include a monthly on-site meeting or shall be conducted at other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor shall describe, on an activity-by-activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

#### **3.4.1 Update Submission Following Progress Meeting**

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than four (4) working days after the monthly progress meeting.

#### **3.4.2 Progress Meeting Contents**

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost to Date, shall be subject to the approval of the Contracting Officer.

#### **3.4.3 Earnings Report**

A compilation of the Contractor's Total Earnings on the project from the Notice-to-Proceed until the most recent Monthly Progress Meeting shall be recorded. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and the Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. This report shall: sum all activities and provide a percent complete by individual activity and total project percent complete. The report shall contain, for each activity: activity identification, activity description, original budgeted amount, total quantity, quantity to date, percent complete (based on cost), and earnings to date.

#### **3.4.4 Cost Completion**

The earnings for each activity started shall be reviewed. Payment shall be based on earnings for each in-progress or completed activity. Payment for individual activities shall not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

#### **3.4.5 Network Analysis System**

The Contractor may, as an option, submit to the Contracting Officer for approval, a time related network analysis in lieu of the previously specified bar chart.

-- End of Section 01321 --

SECTION 01335

SECTION 01335

SUBMITTAL PROCEDURES FOR DESIGN-BUILD SITE ADAPT PROJECTS

PART 1 GENERAL

## 1.1 REFERENCE

The publication listed below forms a part of this specification to the extent referenced. The publication is referenced to in the text by basic designation only.

### CONSTRUCTION SPECIFICATIONS INSTITUTE

Manual of Practice  
Construction Specifications Institute  
[http://www.csinet.org/s\\_csi/index.asp](http://www.csinet.org/s_csi/index.asp)  
601 Madison Street  
Alexandria, Virginia  
22314-1791

### NATIONAL INSTITUTE OF BUILDING SCIENCES (NIBS)

Unified Master Reference List (UMRL)  
National Institute of Building Sciences  
1090 Vermont Avenue, NW, Suite 700  
Washington, DC 20005-4905  
Email: [nibs@nibs.org](mailto:nibs@nibs.org)  
FAX: (202) 289-1092  
Tele: (202) 289-7800

### AFGHANISTAN ENGINEER DISTRICT

AFGHANISTAN ENGINEER DISTRICT  
<http://www.aed.usace.army.mil>  
U.S. Army Corps of Engineers  
Attention: Qalaa House  
APO AE 09356

## 1.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows.

### 1.2.1 DESIGN SUBMITTALS

Contractor furnished design submittals are the various design documents which primarily consist of field investigations, calculations, design analysis, drawings and specifications.

In addition, for each design submittal, the contractor shall submit all non-administrative modifications issued for the contract as part of the Design Submittal package to enable AED to validate that these modifications have been incorporated into this design submittal.

**Design submittals should only address Contract requirements not shown on plans and specifications already furnished to the Contractor as part of this contract. Plans and specifications furnished to the Contractor shall NOT be included as part of any Design Submittal. The Contractor shall complete all work as shown in these furnished drawings and specifications without deviation, unless site conditions mandate changes (larger building foundations per geotechnical investigations, etc.).**

The Contractor shall clearly label and date all design submittals to reflect the current design stage and date of submission to the Government to avoid confusion between current and previous submittals. The Contractor shall not begin construction work until the Government has reviewed and approved the work presented in each Design Submittal, including complete resolution of all DrChecks comments, and the Contracting Officer has

cleared work for construction. Clearance for construction shall not be construed as meaning Government approval. Unless otherwise indicated, the risk for the design is the sole responsibility of the Contractor.

As a minimum, design submittals shall be submitted at the following intervals:

- a. Site-Adapt General Design review - 65%
- b. Final Site-Adapt Design review - 90%
- c. Cleared For Construction review - 100%

#### 1.2.1.1 SITE-ADAPT GENERAL DESIGN (65%)

This Design Submittal presents all information necessary to “Site Adapt” the fully designed and detailed buildings and other project features. It is crucial that the submittal is complete and includes all components noted below and any other pertinent information not listed which the Contractor requires to enable construction to begin as soon as possible. As a minimum, for each Contract project location the submittal shall contain:

- a. Results of the site topographic survey (in accordance with Paragraph 3.9.6.3 through 3.9.6.6 of this Section) which shall include highlighting of significant features (wadis, adjacent properties and structures, roads, etc.) to provide a detailed, overall understanding of the project site and surrounding area; demolition plan for existing site features; complete grading and drainage plan with existing grades, proposed grades, and building finished floor elevations based on Contract technical requirements;
- b. Any necessary adaptations of the Concept Plan and detailed design drawings furnished with this Contract that might be required due to actual site constraints, to include: water supply/storage location and distribution layout plan; wastewater collection or treatment location and tie-in to all required buildings; electrical generation and distribution plan; connection of existing roads with ECP location(s); and any other changes required due to adjacent property or existing topography. As noted in Paragraph 1.2.1, this would also include proposed changes to the detailed drawings if, and only if, site conditions mandate revisions.
- c. Geotechnical Report, indicating appropriate information for various site characteristics, soil parameters as determined by certified lab tests, allowable soil bearing capacities and confirmation that the assumed bearing capacity for the fully designed structures (typically stated as 0.75 kg/cm<sup>2</sup>) can be achieved; estimated settlement for building foundation loads; and all changes to the given building foundation designs due to the Geotechnical Report conclusions.
- d. Septic Tank drawings and details (if required by Section 01010 of the SOW), showing tank depth and sizing based on expected sanitary load, and all connecting piping, with dimensions.
- e. Percolation test locations and results, and complete leach field design (if required by Section 01010 of the SOW), which indicate the site will accommodate such a system for the given project requirements, and alternatives proposed if, and only if, the site characteristics will not support such a system.
- f. Complete design analysis, plans and specifications for any contract feature(s) not already provided in the Contract that the Contractor would like Partial Clearance for Construction on once the Design Submittal has been approved, including project components with long ordering, fabrication and delivery times.
- g. Outline of Construction Specification Sections to be used for other work yet to be submitted at the 90% Final Site-Adapt Design Review submittal, and those Specification items requiring Government Approval (GA), unless 100% Technical Specifications were provided with the Contract.
- h. Well design at each project site location to include a determination of water demand, water availability evaluation, and water quality analysis. Water demand evaluation shall be determined based on the



requirements of the 01010 SOW and 01015 Technical Requirements. Water availability evaluation shall include data concerning study of existing water wells in the vicinity, study of hydrological data, and study of geological data. Well hydraulics data shall also be included from the test well or if available from vicinity wells. Water quality analysis shall include physical, chemical, and bacteriological analyses of water from either a test well or an existing well within the same aquifer of the proposed well.

Drawing for the well design shall include, at a minimum, material and dimensions of well pipe and casing, type and dimensions of screen, type and range of sizes of gravel surrounding screen and at bottom of well shaft, type of grouting for well seal, well pad, location and connection detail for hand pump if required by the 1010. Also required would be a detail of the wellhead with all associated valves, flowmeters, and chlorination system.

- i. Preliminary drawing and details of any grease interceptors and oil-water separators required. Grease interceptors should either be gravity or hydro-mechanical types. Drawings would show sizing, depth, and all connecting piping. Design analysis shall include calculations for sizing both the interceptor/separator and connecting piping.
- j. Preliminary cross sections of roads and sidewalks, showing all essential dimensions, materials, layers, and proposed fore and back slopes of adjacent drainage features.
- k. All preliminary sketches of site storm drainage structures, including calculations in the design analysis for sizing and sloping of pipe runs and ditches. Provide cross sections of drainage structures such as ditches and culverts.

#### 1.2.1.2 FINAL SITE-ADAPT DESIGN REVIEW (90%):

The review of this submittal is primarily to insure that the contract documents and design analysis are proceeding in a timely manner and that the Contract requirements and design criteria are being correctly understood and adhered to. The submittal shall consist of the following:

- a. Design Analysis complete.
- b. Draft Construction Specifications complete - all anticipated sections, edited to include only applicable requirements, if not provided as part of the Contract.
- c. Construction Drawings complete with all 65% comments incorporated. The Contractor is expected to have completed all of his coordination checks and have the drawings in a design complete condition. The drawings shall be finalized at this time including the incorporation of any design review comments generated by all past design reviews. The drawings shall contain all the details necessary to assure a clear understanding of the work throughout construction.

#### 1.2.1.3 "CLEARED FOR CONSTRUCTION" SUBMITTAL (100%):

The review of this submittal is to insure that the design is in accordance with directions provided the Contractor during the design process. The only effort remaining between the Final Site-Adapt Design Review Submittal and the "Cleared For Construction" Design Review Submittal is the incorporation of all Government review comments. The Contractor shall submit the following documents for this review:

- a. Design Analysis, only if changes have occurred since 90% Design Submittal. The Design Analysis shall contain all explanatory material giving the design rationale for any design decisions which would not be obvious to an engineer reviewing the Final Drawings and Specifications.
- b. Construction Specifications, complete.
- c. Construction Drawings, complete.

Once the design documents have been "Cleared for Construction" by the Contracting Officer, the Contractor shall clearly identify each document by annotating it as "Cleared for Construction."

## 1.2.2 PARTIAL DESIGN SUBMITTALS

In the interest of expediting construction, the Contracting Officer may approve partial design submittals, procurement of materials and equipment, as well as issue the Notice To Proceed (NTP) for construction of those elements of the design which have been cleared for construction. Such partial notices to proceed shall be solely at the discretion of the Contracting Officer. The Contractor must obtain the approval of the Designer of Record (DOR) and the Government's concurrence for any Contractor proposed revision to the professionally stamped and sealed design reviewed and Cleared for Construction by the Government, before proceeding with the revision. The Government reserves the right to non-concur with any revision to the design, which may impact furniture, furnishings, equipment selections or operations decisions that were made, based on the reviewed and cleared for construction design. Any revision to the design, which deviates from the contract requirements (i.e., the RFP and the accepted proposal), will require a modification, pursuant to the Changes clause, in addition to Government concurrence. The Government reserves the right to disapprove such a revision. Unless the Government initiates a change to the contract requirements, or the Government determines that the Government furnished design criteria are incorrect and must be revised, any Contractor initiated proposed change to the contract requirements, which results in additional cost, shall strictly be at the Contractor's expense. The Contractor shall track all approved revisions to the reviewed and cleared for construction design and shall incorporate them into the As-Built design documentation, in accordance with Section 01780A, CLOSEOUT SUBMITTALS, Paragraphs 1.1 and 1.2, which lists all requirements associated with submission of editable CADD format As-Built required as part of this contract. The Designer of Record shall document its professional concurrence on the As-Built for any revisions by affixing its stamp and seal on the drawings and specifications.

## 1.2.3 DEVIATIONS AND CHANGES TO THE STANDARD DESIGNS

**Contractor shall construct standard building designs as indicated.** Any request to deviate or change the standard building designs must be due to changed site conditions ONLY and submitted to the AED Resident Office administering the contract. Contractor shall indicate the changes and provide a narrative justification for the changes proposed.

## 1.2.4 USE OF DrChecks<sub>SM</sub> FOR DESIGN SUBMITTAL COMMENT AND RESPONSE

### 1.2.4.1 DrChecks<sub>SM</sub> WEB LINK

All AED Design Submittal review comments will be documented using the standard design review tool for the U.S. Army Corps of Engineers, a web-based application called "DrChecks<sub>SM</sub>". The web link to DrChecks<sub>SM</sub> is: <https://www.projnet.org/projnet/binKornHome/index.cfm>

### 1.2.4.2 DrChecks<sub>SM</sub> VENDOR IDENTIFICATION AND TUTORIAL

Upon notification of award, the contractor shall immediately coordinate with the Chief, Engineering Branch, AED to acquire a vendor identification and a brief tutorial on the use of DrChecks<sub>SM</sub>. The contractor is responsible for providing their own DrChecks<sub>SM</sub> Administrator within their own design staff personnel to access and accomplish actions within DrChecks<sub>SM</sub>.

### 1.2.4.3 NOTIFICATION OF DrChecks<sub>SM</sub> FILE ACCESS

The Afghanistan Engineer District will complete a review at every Design Submittal stage for conformance with the technical requirements of the Contract and document all comments in DrChecks<sub>SM</sub>. At completion of the review, a notification will be issued to the Contractor by the Contracting Officer's representative that the

particular DrChecks<sub>SM</sub> file will be opened to the Contractor. Until this time, the Contractor is not able to view any AED comments for that particular Design Submittal.

#### 1.2.4.4 FURTHER CONTRACTOR INFORMATION AFTER DrChecks<sub>SM</sub> REVIEWS

See Paragraph 3.7.4, Government Review, for further procedures and requirements associated with Design Submittal reviews.

#### 1.2.5 CONSTRUCTION SUBMITTALS

##### 1.2.5.1 Contractor Furnished Government Approved Construction Submittals (GA)

Government approved construction submittals are primarily related to plans (Contractor Quality Control, Accident Prevention, Resident Management System, Area Use, etc.), schedules (Project Schedule/Network Analysis), and certificates of compliance, reports and records/statements. They may also include proposed variations to approved design documents in accordance with the paragraph entitled "VARIATIONS".

In addition, GA construction submittals are required for the following:

##### a. CIVIL FEATURES

TESTING RESULTS: Data will include information on the locations and depths of all viable water supply sources at the site(s) involved and a water quantity and water quality analysis for each source from the Ministry of Public Health or other certified testing firm.

##### b. MECHANICAL FEATURES

EQUIPMENT SUBMITTALS: Manufacturer's standard catalog data, installation, Operation and Maintenance (O&M) manuals and construction details for water wells, water tanks, control valves, pipe insulation, water pumps, air handling units, condensers, variable air volume (VAV) boxes.

TESTING RESULTS: For water tanks, water pumps (including instrumentation), water piping, sprinkler systems, and oxygen systems, submit six (6) copies of each test containing the following information in bound letter-size booklets:

- 1) The date the tests were performed.
- 2) A list of equipment used, with calibration certifications.
- 3) A copy of measurements taken.
- 4) The parameters to be verified.
- 5) The condition specified for the parameter.
- 6) The inspection results, signed, dated, and certified by the installer. The certification shall state that required procedures were accomplished, that the procedures were conducted in compliance the plans and specifications.
- 7) A description of adjustments performed.

Individual reports shall be provided for storage tank tests, piping tests, system performance tests, high level alarm test, and the system leak tests. Drawings shall be folded blue lines, with the title block visible.

c. ELECTRICAL FEATURES

PRODUCT DATA and SHOP DRAWINGS: generators (and its auxiliaries), load bank, transformers, substations, panels/switchboards/motor control centers, lightning protection, receptacles, circuit breakers.

DESIGN DATA: lightning protection and grounding.

TEST DATA: Lightning protection and grounding.

d. ARCHITECTURAL FEATURES

PRODUCT DATA/CATALOGUE CUTS/SHOP DRAWINGS/SCHEDULES: Specialty doors and frames (fire rated, sound rated, bullet resistant, security, overhead rolling); door hardware; windows; metal roofing (including fasteners, flashing, and accessories); building insulation; fire-rated and water-resistant gypsum board; and other specialty products (bullet resistant glazing/panels).

COLOR BOARD: Architectural finishes

PRODUCT DATA/CATALOGUE CUTS/INSTALLATION INSTRUCTIONS: Exterior Insulation and Finish System (EIFS)

SHOP DRAWINGS: Casework/Cabinetry

1.2.5.2 For Information Only Construction Submittals (FIO)

All submittals not requiring Designer of Record or Government approval will be for information only. These construction submittals shall be checked, stamped, signed and dated by the Contractor's Quality Control Engineer, certifying that such submittal complies with the contract requirements. All Contractor submittals shall be subject to review by the Government at any time during the course of the contract. Any Contractor submittal found to contain errors or omissions shall be resubmitted as one requiring "approval". No adjustment for time or money will be allowed for corrections required as a result of noncompliance with plans or specifications. Normally submittals For Information Only will not be returned. Approval of the Contracting Officer is not required on FIO submittals. These submittals will be used for information purposes. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications and will not prevent the Contracting Officer from requiring removal and replacement if nonconforming material is incorporated in the work.

1.2.5.3 Variations

After design submittals have been reviewed and cleared for construction by the Contracting Officer, no submittal for the purpose of substituting materials, equipment, systems, and patented processes will be considered by the Government unless submitted in accordance with the paragraph entitled VARIATIONS.

1.2.5.4 Additional Shop Drawings and Submittals

In accordance with the paragraph entitled DESIGN DISCREPANCIES, the Government may request the Contractor to provide additional shop drawing and submittal type data subsequent to completion of the design.

1.2.5.5 Incomplete Design

The Contractor shall not use construction submittals as a means to supplant and/or supplement an incomplete design effort.

### 1.3 SUBMITTAL CERTIFICATION

The CQC organization shall be responsible for certifying that all submittals and deliverables have been reviewed in detail for completeness, are correct, and are in strict conformance with the contract drawings, specifications, and reference documents.

#### 1.3.1 Effective Quality Control System

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with Contract Clause 52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION - ALTERNATE I, and SECTION 01451 CONTRACTOR QUALITY CONTROL.

##### 1.3.1.1 Organizational Responsibility

The quality control system shall cover all design, construction, subcontractor, manufacturer, vendor, and supplier operations at any tier, both onsite and offsite.

##### 1.3.1.2 CQC System Manager Review and Approval

Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager. If found to be in strict conformance with the contract requirement, each item shall be stamped, signed, and dated by the CQC System Manager. Copies of the CQC organizations review comments indicating action taken shall be included within each submittal.

##### 1.3.1.3 Determination of Compliance

Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements by the Contracting Officer. The contractor shall submit all required documentation with submittals. The U.S. Army Corps of Engineer (USACE) will not accept partial submittals.

#### 1.3.2 Responsibility for Errors or Omissions

It is the sole responsibility of the Contractor to ensure that submittals do or do not comply with the contract documents. Government review, clearance for construction, or approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract.

##### 1.3.2.1 Government Review

Government review, clearance for construction, or approval of post design construction submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory.

#### 1.3.3 Substitutions

After design submittals have been reviewed and cleared for construction by the Contracting Officer, no re-submittal for the purpose of substituting materials or equipment will be considered unless justified as indicated in the paragraph entitled, "VARIATIONS."

#### 1.3.4 Additional Submittals

In conjunction with Contract Clause 52.236-5 MATERIAL AND WORKMANSHIP, the Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work.

#### 1.3.5 Untimely and Unacceptable Submittals

If the Contractor fails to submit submittals in a timely fashion, or repetitively submits submittals that are incomplete or not in strict conformance with the contract documents, no part of the time lost due to such actions shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

#### 1.3.6 Stamps

Stamps shall be used by the Contractor on all design and post design construction submittals to certify that the submittal meets contract requirements and shall be similar to the following:

Contractor (Firm Name)  
Contract Number  
Contract Name

I certify that this submittal accurate, is in strict conformance with all contract requirements, has been thoroughly coordinated and cross checked against all other applicable disciplines to prevent the omission of vital information, that all conflicts have been resolved, and that repetition has been avoided and, it is complete and in sufficient detail to allow ready determination of compliance with contract requirements by the Contracting Officer.

Name of CQC System Manager: \_\_\_\_\_

Signature of CQC System Manager: \_\_\_\_\_

Date: \_\_\_\_\_

#### 1.4 ENGLISH LANGUAGE

All specifications, drawings, design analysis, design calculations, shop drawings, catalog data, materials lists, and equipment schedules submitted shall be in the English language.

#### 1.5 UNITS OF MEASUREMENT

Design documents shall be prepared in accordance with the guidance offered in SECTION 01415 METRIC MEASUREMENTS.

The metric units used are the International System of Units (SI) developed and maintained by the General Conference on Weights and Measures (CGPM); the name International System of Units and the international abbreviation SI were adopted by the 11th CGPM in 1960.

##### 1.5.1 Drawings

###### 1.5.1.1 Site Layout

All site layout data shall be dimensioned in meters or coordinates, as appropriate. All details and pipe sizes shall be dimensioned in millimeters.

EXAMPLE: Masonry openings shall be a U.S. module to suit a standard U.S. door. The dimensions of the opening shall be given in SI units. Metric dimensions for site plans shall be in meters and fraction thereof. Dimensions for all other drawings shall be in millimeters using hard metric designations (example: 12 meters =

12 000). Hard metric is defined as utilizing standard metric products and the use of measurements in increments of fifty (50) and one hundred (100) millimeters.

#### 1.5.1.2 Geo-reference

All site plans shall be geo-referenced using the WGS 1984 coordinate system, specifically the following: WGS 1984 UTM one 42 N. If the designer is not able to use the stated coordinate system the coordinate system used shall be correlated to the stated coordinate system. A table shall be provided within the site drawing set cross referencing the WGS84 system to that utilized. This is required to allow AED to incorporate the plans into GIS for storage, map production, and possible geospatial analysis of the different work sites.

#### 1.5.2 Design Calculations

Calculations shall be in SI units to meet the requirements of the design. Quantities on the contract drawings stated in SI units shall also be stated in SI units in the design analysis to match the drawings.

#### 1.5.3 Specifications

All equipment and products shall be specified according to U.S. standards and described by appropriate units as required herein.

### 1.6 WITHHOLDING OF PAYMENT FOR SUBMITTALS

#### 1.6.1 Design Submittals

Payment for Design work will not be made in whole or in part until the Government has reviewed and cleared the design for construction.

#### 1.6.2 Construction Submittals

Payment for materials incorporated in the work will not be made if required approvals have not been obtained. In event under separate clause of the contract, the Contractor is allowed partial or total invoice payment for materials shipped from the Continental United States (CONUS), and/or stored at the site, the Contractor shall with his request for such payment, submit copies of approvals (ENG Form 4025) certifying that the materials that are being shipped and/or stored have been approved and are in full compliance with the contract technical specifications.

## PART 2 PRODUCTS

### 2.1 GENERAL

The following are contract deliverables which expound upon and finalize the design parameters/requirements outlined within the contract documents. They shall be prepared in such a fashion that the Prime Contractor is responsible to the Government and not as an internal document between the Prime Contractor and its Subcontractors, Vendors, Suppliers, etc.

### 2.2 PROJECT NARRATIVE

The Project Narrative shall be a bound set and shall contain the contract Request For Proposal (RFP) Sections 01010 and 01015 (and any additional RFP sections that are appropriate). The RFP Section 01010 and 01015 shall be the latest version. Any subsequent changes to the RFP shall be clearly marked and highlighted with explanation for the changes. The Project Narrative shall also contain the general description of the project and a discussion of the design approach and design features for the project.

### 2.3 DESIGN ANALYSIS

### 2.3.1 Submittal

**Only design analyses associated with the “Site Adapt” features of this contract shall be submitted for review.** It shall be written in the English language with SI units of measure. The design analysis is a written explanation of the project design which is expanded and revised (updated) as the design progresses. The design analysis shall contain all explanatory material giving the design rationale for any design decisions which would not be obvious to an engineer reviewing the final drawings and specifications. The design analysis contains the criteria for, and the history of, the project design, including criteria furnished by the Government, letters, codes, references, conference minutes, and pertinent research. Design calculations, computerized and manual, are included in the design analysis. Narrative descriptions of design solutions are also included. Written material may be illustrated by diagrams and sketches to convey design concepts. Catalog cuts and manufacturer's data for all equipment items, shall be submitted. Specific requirements for the design analysis, listed by submittal phase, are noted in Paragraph 1.2.1.

### 2.3.2 Format

Format of design analysis shall closely match the standard format referenced within the RFP.

## 2.4 DESIGN CALCULATIONS

**Only calculations associated with the “Site Adapt” features of this contract shall be submitted for review, unless site conditions mandate changes to drawings and specifications furnished with this Contract.** All design calculations shall be presented such that they are easily understood, correlated with RFP requirements (Section 1010 and 1015 criteria; codes; all other applicable or pertinent criteria) and all final conclusions clearly documented and summarized. The Design Submittal must include complete information (Soil Report, percolation test results, concrete design strengths, steel material properties, electrical loads, heat gain/loss assumptions, etc.) necessary to support all design calculations in order to easily and efficiently verify the accuracy of this information and the resulting project components shown in plans and specifications.

### 2.4.1 Submittal

When design calculations are voluminous, they shall be bound separately from the narrative part of the design analysis. Design calculations will include a title page, table of contents, and be indexed (tabbed) to separate distinct parts of the various analysis and design actions being accomplished to support plan drawings submitted. They shall be presented in a clear, consistent and legible format in order to quickly understand the analysis and design accomplished. Presentation shall be such that a person unfamiliar with the project features and associated analysis and design can quickly understand the overall design process and procedures, review the information in conjunction with the given set of plans and specifications, and verify the suitability of all information submitted.

All design calculations shall explain the source of loading conditions with assumptions and conclusions explained. The analysis and design methods shall also be explained, including assumptions, theories and formulae. Include applicable diagrams that are clearly explained and correlated with related computations, whether computer or hand generated. The design calculations shall include a complete and comprehensive list of the criteria (and date or version of the criteria) that the design/analysis will be compared to (codes, Corps of Engineers Engineering Regulations, Engineering Manuals, etc.). Within the separable elements of design calculations, the engineer shall cite the specific code or reference paragraph or section as appropriate to indicate conformance to requirements.

At the beginning of each project component design section, present a summary of all load conditions and combinations required per applicable code or Corps of Engineers manual or regulation. Then clearly identify the particular load case governing the design and clearly show how the particular analysis, construction materials to be used, and the specific design meet the governing load combination.



Calculation sheets shall carry the names or initials of the engineer and the checker and the dates of calculations and checking. No portion of the calculations shall be computed and checked by the same person.

#### 2.4.2 Computer Analysis

Provide a clear summary of all computer outputs and highlight in the outputs information used in the analysis and design accomplished elsewhere in the calculations.

If a computerized analysis or design program is used (either commercial software packages or unique, designer-written computer analysis/design tools), the computations shall provide clear reference to the software program and version being used and an explanation of the validity of the particular program to the given application (where has the program been used before, what input and output does the program provide, is the program a recognized Corps of Engineers or industry standard). If the program is proprietary to the Contractor (not recognized by the Corps of Engineers or industry), the Contractor shall provide a sample hand calculation to verify the results of one set of data generated by the computer program.

State exactly the computation performed by the computer. Include applicable diagrams, adequately identified. Provide all necessary explanations of the computer printout format, symbols, and abbreviations. Use adequate and consistent notation. Provide sufficient information to permit manual checks of the results.

Each set of computer printouts shall be preceded by an index and by a description of the computation performed. If several sets of computations are submitted, they shall be accompanied by a general table of contents in addition to the individual indices.

When the computer output is large, it shall be divided into volumes at logical division points. All final computer results used in design shall be separated from the total pages of computer output that might be included in the design calculations for ease of review.

### 2.5 SPECIFICATIONS

**Specifications for most work associated with this Contract have been furnished to the Contractor and only portions of them should be submitted for review with the “Site Adapt” portion of the work.** If the Contractor determines that work associated with the “Site Adapt” features of this contract require additional specifications, they shall be submitted for review and approval. These additional specifications shall be prepared in accordance with the Construction Specifications Institute (CSI) format to match the format of specifications provided in the Contract.

#### 2.5.1 Use of Unified Facilities Guide Specifications (UFGS)

If additional specifications are deemed necessary by the Contractor, UFGS (Uniform Federal Guide Specifications) are required when U.S. products and systems are required or used. Current UFGS information may be obtained at the following location: [http://www.wbdg.org/ccb/browse\\_org.php?o=70](http://www.wbdg.org/ccb/browse_org.php?o=70).

Specifications for UFGS are in SpecsIntact format. SpecsIntact is government sponsored software used to edit specifications for government contracts. The software is available at the following link: <http://specsintact.ksc.nasa.gov/index.asp>.

#### 2.5.2 Quality Control and Testing

Any additional specifications deemed necessary by the Contractor shall include required quality control and further indicate all testing to be conducted by the Contractor, its subcontractors, vendors and/or suppliers.

#### 2.5.3 Ambiguities and indefinite specifications

Ambiguities, indefinite specification requirements (e.g., highest quality, workmanlike manner, as necessary, where appropriate, as directed etc) and language open to interpretation is unacceptable.

## 2.5.4 Industry Standards

### 2.5.4.1 U.S. Industry Standards

The Specifications shall be based on internationally accepted U.S. industry Standards. Customarily accepted publications may be found in the UNIFIED MASTER REFERENCE LIST (UMRL) which may be located at the following URL: <http://www.hnd.usace.army.mil/techinfo/UFGS/UFGSref.htm>.

To access the UMRL select the “Unified Facilities Guide Specifications” tab and scroll down to Unified Master Reference List (UMRL) (PDF version).

Examples of U.S. standards are: National Fire Protection Association (NFPA), International Building Code (IBC), American Concrete Institute (ACI), American Water Works Association (AWWA), ADAAG (ADA Accessibility Guidelines) for Buildings and Facilities, etc. Standards referenced shall be by specific issue; the revision letter, date or other specific identification shall be included.

This document lists publications referenced in the Unified Facilities Guide Specifications (UFGS) of the Corps of Engineers (USACE), the Naval Facilities Engineering Command (NAVFAC), the Air Force Civil Engineer Support Agency (AFCESA), and the guide specifications of the National Aeronautics and Space Administration (NASA). This document is maintained by the National Institute of Building Sciences (NIBS) based on information provided by the agencies involved and the standards producing organizations. The listing is current with information available to NIBS on the date of this publication.

Standards referenced in specifications and drawings prepared by the Contractor shall be by specific issue; the revision letter, date or other specific identification shall be included.

### 2.5.4.2 Non U.S. Industry Standards

If non-U.S. industry standards (e.g., codes, regulations, or technical references and norms) are authorized for use under this contract and are incorporated in the Contractor's design, one (1) copy of each standard referenced shall be provided to the Government.

Where a U.S. design and/or construction standard cannot be referenced due to non-availability of products and/or systems, another specification format using the CSI guidelines may be utilized for that particular product and/or system. If a majority of the specifications within this project reference non-U.S. products due to availability and/or other factors, the entire set of specifications are not required to be in UFGS and SpecsIntact format.

## 2.6 DRAWINGS

### 2.6.1 Computer Assisted Design and Drafting (CADD)

Computer Assisted Design and Drafting (CADD) is required for all work related to this contract. Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare new drawings. The CADD deliverables shall meet the requirements of the A/E/C CADD Standard (Release 3.0). Emphasis is on drawings meeting sheet layout standards, level/layer naming standards and sheet naming conventions. The CADD standards may be downloaded at the CAD/BIM Technology Center at the following link: <https://caddbim.usace.army.mil/default.aspx?p=s&t=13&i=4>.

The Contractor shall furnish all softcopy design submittals (and As-Builts) using software applications in either .dwg (AutoCAD, AutoDesk release 2005 or later) or in .dgn (MicroStation, Bentley Systems version 8.0 or later) format. In addition, the Contractor is required to submit the softcopy design submittals in .pdf (Adobe

Acrobat) format. Drawings prepared in any convention other than CADD, must have the written approval of the Contracting Officer.

#### 2.6.2 Drawings

Drawings shall be prepared in the English language with metric (SI) units of measure. All the drawings and details of the working drawings shall be adequately labeled and cross-referenced. Complete, thoroughly checked, and coordination with other engineering disciplines design drawings shall be submitted. At the final design submittal (100%) the Contractor shall have incorporated all design review comments generated by previous design review(s), have completed all of the constructability and coordination comments, and have the drawings in a Ready-to-Build condition. The drawings shall be complete at this time and contain all the details necessary to ensure a clear understanding of the work throughout construction.

#### 2.6.3 Drawing Size Border Sheets

All drawings shall be prepared in size "A1" border sheets (594mm by 841mm). Hardcopy design submissions may be printed on half size drawing sheets ("A3", 279 mm by 420 mm) for purposes of saving paper and for ease of review. If drawings are not readable in the half size reduction, the Contractor shall submit all drawings in A1 border sheets. All final contract drawing sets (As-Built) shall be submitted on A1 border sheets. Drawing sheets shall be trimmed to specified size if necessary.

#### 2.6.4 Sequence of Design Drawings

Referencing the A/E/C CADD Standard (pg. 13, Table 2-1 of the A/E/C CADD standards) the sequence of drawings shall follow the sequence as shown below:

##### Discipline

1. General
2. Hazardous Materials
3. Survey/Mapping
4. Geotechnical
5. Civil
6. Landscape
7. Structural
8. Architectural
9. Interiors
10. Equipment
11. Fire Protection
12. Plumbing
13. Process
14. Mechanical
15. Electrical
16. Telecommunications
17. Resource
18. Other Disciplines
19. Sub-Contractor/Shop Drawings
20. Operations

#### 2.6.5 Drawing Folder Structure

CADD files shall be organized in a folder structure to what is described in Paragraph 2.6.4. For multi-building projects a folder of each building type shall be created and the applicable folders shown in each building type folder.

#### 2.6.6 Drawing Sheet Assembly

CADD files shall be organized to what is described in “Option 2 – Use of Design Model Only” (page 10, Figure 2-3 of the A/E/C CADD Standard). This method will utilize one view and the use of “paper space” is not used. The border sheet shall be X-REF into each model file and scaled up to the applicable scale.

#### 2.6.7 Model Files

Model files represent the building’s physical layout and components such as floor plans and elevations. Model files shall be drawn to full size (1:1) in the default view. Floor Plan Model files represent one floor. Model files shall have coordinates (x,y,z) of 0,0,0 in paper space on layout. The exception for model files with coordinates 0,0,0 shall be the civil site plan (see section 1.5.1.2 Georeferencing).

#### 2.6.8 Border Sheet Files

Border sheet files are used to assemble model files for plotting and viewing purposes. Every border sheet file has a drawing area, title block, border and represents one plotted drawing.

#### 2.6.9 Layer/Level names

Layer or level files names shall follow the guidelines of appendix A and B of the A/E/C CADD standards. For AutoCAD, .dwt (drawing template files) shall be used to import the proper layers that will be inclusive of the correct line type, color, and line thickness of the respective layer.

#### 2.6.10 Drawing File Naming Convention

CADD files shall follow the naming convention as described in the A/E/C CADD Standards. For model files reference pg 12 - 16, figure 2-4, tables 2-1 and 2-2. for sheet files reference pg 18 – 22, figure 2-5, table 2-3.

#### 2.6.11 Sheet Identification Block

The sheet identifier will follow the name of the border sheet file. This will consist of the discipline designator, the sheet type designator and the sheet sequence number as referenced in pg 23, figure 2-6 of the A/E/C CADD Standards.

#### 2.6.12 Drawing Scales

The scales indicated on the following list shall, in general, be used for all drawings. The Contractor may, at its option, make exceptions to scales indicated, if approved in writing by the Contracting Officer.

TYPICAL DRAWING SCALES	
DRAWING TYPE	METRIC
SITE PLAN	1:200
	1:400
	1:500
	1:600
	1:700
	1:1000
	1:2000
	1:5000
	1:6000
	1:10000
	1:20000

FLOOR PLAN	1:50
	1:100
	1:200
ROOF PLAN	1:200
EXTERIOR ELEVATIONS	1:100
	1:200
INTERIOR ELEVATIONS	1:50
	1:100
CROSS SECTIONS	1:50
	1:100
	1:200
WALL SECTIONS	1:20
STAIR DETAILS	1:10
DETAILS	1:5

#### 2.6.13 Symbols, Line styles, & Patterns

Approved symbols, line styles, and patterns shall be in accordance with AEC CAD Standard Release 3.0 or current version (see Appendix D of the A/E/C CADD Standards). The approved symbols, line styles, and patterns associated with AutoCAD software may be downloaded in the following link:  
<https://tsc.wes.army.mil/products/standards/aec/aecstdsym.asp>

#### 2.6.14 Plotter Prepared Original Drawings

Plotter prepared original drawings shall be prepared on 20 pound bond paper, unless otherwise approved and shall be plotted on the matte side. Raster plotters must provide a minimum resolution of 400 dpi while vector plotters shall provide a minimum resolution of 0.0010 inch with an accuracy of +0.1% of the move and a repeatability error of not more than 0.005 inch. Drawings produced from dot matrix plotters are not acceptable. Plots accompanied by the digital design file may be prepared on vellum; translucent bond is not acceptable. Line density shall be equivalent to that produced by black India ink; half tone plots are only acceptable where the half-tone color setting of RGB (red, green blue) settings equal a value of 153 (see pg. 27, Table 3-4 of the A/E/C CADD Standards). Drawings plotted in color is not acceptable. Manual changes to plotted originals are not acceptable.

#### 2.6.15 Title and Revision Block

Title and revision block shall match examples shown in SITE ADAPT 1335a-Attachments-AED.pdf, Figures 1 through 4, furnished as an attachment to this RFP.

#### 2.6.16 Legends

For each submittal, legends of symbols and lists of abbreviations shall be placed on the drawings. They shall include all of the symbols and abbreviations used in the drawing set, but shall exclude any symbols and abbreviations not used. Since many symbols are limited to certain design disciplines, there is a definite advantage to the use of separate legends on the initial sheet of each design discipline or in the Standard Details package for each discipline. If legends have not been shown by discipline, a legend shall be placed on the first drawing.

#### 2.6.17 Location Grid

To facilitate the location of project elements and the coordination of the various disciplines' drawings, all plans shall indicate a column line or planning grid, and all floor plans (except structural plans) shall show room numbers.

#### 2.6.18 Composite and Key Plans

If the plan of a large building or structure must be placed on two or more sheets in order to maintain proper scale, the total plan shall be placed on one sheet at a smaller scale. Appropriate key plans and match lines shall appear on segmented drawings. Key plans shall be used not only to relate large scale plans to total floor plans but also to relate individual buildings to complexes of buildings. Key plans shall be drawn in a convenient location and shall indicate the relative location of the represented plan area by crosshatching.

#### 2.6.19 Specifications Placed on the Drawings

Details of standard products or items which are adequately covered by specifications shall not be included on the drawings.

#### 2.6.20 Revisions

Drawing revisions shall be prepared only on the original CADD files. A revision area is required on all sheets.

#### 2.6.21 Binding

All volumes of drawing prints shall be firmly bound and shall have covers of heavier bond than the drawing sheets. If posts are used to fasten sheets together, the drilled holes on the bond edges of the sheets shall be on 8-1/2-inch centers.

#### 2.6.22 Government Provided files

At the Preconstruction meeting, the Contractor shall be provided a CD that shall contain the AED border sheet, the A/E/C CADD standards, and various other files related to the compliancy of CADD files to the A/E/C CADD standards.

### PART 3 EXECUTION

#### 3.1 GENERAL

##### 3.1.1 Design Concept Coordination Meeting

Shortly after Notice To Proceed (NTP) the Government or contractor may suggest meeting(s) to review the Design Submittal process or discuss various aspects of the contract to enable prompt and efficient initiation of contract actions. Meeting(s) will be held to assure attention is focused on key project requirements (necessary contractor design and Government review that is required to provide Construction Clearance), to discuss features and items of work that need to be submitted early due to long lead time items, or discuss other concepts/ideas that will help accelerate the contract work. Other Design Coordination meetings may be requested throughout the contract period if Government review of various contractor Design Submittals indicate poor design and plan or specification quality in order to clearly explain the changes and improvements required of the contractor, assure understanding of Government comments, code references and required investigations and calculations, to move forward with acceptable design and satisfactory plans and specifications.

##### 3.1.2 Government Design Changes

Government design changes which do not increase construction costs shall be made at no charge to the Government. The Contracting Officer may request design submittals in addition to those listed when deemed

necessary to adequately describe the work covered in the contract documents. Submittals shall be made in the respective number of copies and to the respective addresses set forth in the paragraph entitled SUBMITTAL PROCEDURE. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements.

### 3.2 SUBMITTAL REGISTER

#### 3.2.1 Design Submittals

The Contractor shall submit as part of his Project Schedule Design Submittal milestone dates. The Contractor shall post all actual dates of submittal actions (including clearance for construction) as they occur.

#### 3.2.2 Construction Submittal Register (ENG Form 4288)

Attached to this section is ENG Form 4288 which the Contractor is responsible for developing for this contract. All design and construction submittals shall be shown on this register. The submittal register shall be the controlling document and will be used to control all submittals throughout the life of the contract. The Contractor shall maintain and update the register on a monthly basis for the Contracting Officer's approval.

#### 3.3 TRANSMITTAL FORM (ENG Form 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both design and construction submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care will be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

### 3.4 PROGRESS SCHEDULE

The Contractor shall prepare and submit a design progress schedule to the Contracting Officer. The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The progress schedule shall show, as a percentage of the total design price, the various items included in the contract and the order in which the Contractor proposes to carry on the work, with dates on which he will start the features of the work and the contemplated dates for completing same. Significant milestones such as review submittals shall be annotated. The Contractor shall assign sufficient technical, supervisory and administrative personnel to insure the prosecution of the work in accordance with the progress schedule. The Contractor shall correct the progress schedule at the end of each month and submit as required to the Contracting Officer. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

### 3.5 SCHEDULING

#### 3.5.1 Design Submittals

Adequate time (a minimum of fourteen (14) full calendar days exclusive of mailing time) shall be allowed for AED review and comment in DrChecks<sub>SM</sub>. This time period starts on the next full day after delivery of the Design Submittal to AED. If the Contractor fails to submit design submittals in a timely fashion, or repetitively submits design submittals that are not in strict conformance with the Contract documents, no part of the time lost due to such actions shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

#### 3.5.2 Construction Submittals

Contractor furnished Government Approved Construction Submittals (GA) for items noted in Paragraph 1.2.5 of this Section, or others as required by the COR, shall be submitted to the Area or Resident Office, per directions given at the Pre-Construction meeting. Adequate time (a minimum of fourteen (14) full calendar days exclusive of mailing time) shall be allowed for AED review and comment.

### 3.5.3 Post Design Construction Submittals

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of fourteen (14) full calendar days exclusive of mailing time) shall be allowed for review and approval. If the Contractor fails to submit post design construction submittals in a timely fashion, or repetitively submits submittals that are not in strict conformance with the Contract documents, no part of the time lost due to actions shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

## 3.6 SUBMITTAL PROCEDURE

### 3.6.1 Design Submittals

#### 3.6.1.1 Afghanistan Engineer District (AED)

One (1) half-size hard copy and two (2) soft copies (electronic version) of all design submittals (calculations, reports of field tests, design analysis, plans, specifications, etc) shall be transmitted to the Government at the following address, by means of ENG Form 4025:

#### AFGHANISTAN ENGINEER DISTRICT

(1) DHL, FEDEX, UPS or any other courier service:

U.S. Army Corps of Engineers  
Afghanistan Engineer District  
House # 1, St. #1 West  
West Wazir Akbar High School  
Behind Amani High School  
Kabul, Afghanistan  
Attention: Chief, Engineering Branch

The soft copy (electronic version) and CD case shall both be clearly labeled (hand written information is not acceptable – typed labels are required) with contract information (contract #, title, contractor name, specific design submittal stage including if it is a Resubmittal, date of submission, components of the submittal – design analysis, plans, specifications, and if more than one CD then state 1 of “X”, 2 of “X”, etc., anti-virus information below, etc.)

The Contractor shall scan the soft copy (electronic version) of each Design Submittal using most up-to-date version of recognized Industry-standard anti-virus software (Symantec, Norton, etc.) to insure that no viruses are contained in it prior to acceptance by AED. The label shall indicate it has been scanned for viruses and the anti-virus software and version clearly indicated.

#### 3.6.1.2 Resident/Area Engineer Office

Complete design submittals shall be provided to the Area and/or Resident Engineer Office such that these are received **at the same time** as these submittals are delivered to the AED address in Para. 3.6.1.1. At the Pre-Construction meeting, the Contractor will be furnished the Area and/or Resident Office address to which these submittals shall be provided along with the number and size of hard and soft (electronic version) copies required for these offices. As per Paragraph 3.6.1.1, soft copies are to be properly labeled and checked for viruses by the contractor prior to delivery.



### 3.6.1.3 Editable CADD Format As-Builts

This is a Site-Adapt project and in accordance with Contract Clause 52.227-7022 GOVERNMENT RIGHTS (UNLIMITED), the Government has non-exclusive rights to use the design on other projects. Therefore, the As-Builts furnished to the Government must be in an editable format. See Section 01780A CLOSEOUT SUBMITTALS, Paragraphs 1.1 and 1.2, for all requirements associated with submission of editable CADD format As-Builts required as part of this contract.

### 3.6.2 Post Design Construction Submittals

One (1) copy of all post design construction submittals shall be transmitted to:

#### AFGHANISTAN ENGINEER DISTRICT

(1) DHL, FEDEX, UPS or any other courier service:

U.S. Army Corps of Engineers

Afghanistan Engineer District

House # 1, St. #1 West

West Wazir Akbar High School

Behind Amani High School

Kabul, Afghanistan

Attention: Chief, Engineering Branch

### 3.6.3 Submittal Numbering System

Instructions on the numbering system to be used for construction submittals follows.

#### 3.6.3.1 Submittals

Shop drawings and materials are listed on the Submittal Register (ENG Form 4288) as follows:

- a. List is prepared according to contract specifications and drawings, picking up all items involved in the project.
- b. This list is divided into sections as indicated in the specifications. For example:

Section 01015	"Technical Requirements"
Section 01335	"Design Submittals"
Section 02831	"Chain-Link Fence"
Section 02710	"Subdrainage System"
Section 03300	"Concrete For Building Construction"
Section 04200	"Masonry"

#### 3.6.3.2 Numbering procedures for transmittal on ENG FORM 4025

Each Specification Section will have various requirements for submittals (design information, product data, test reports, procedures, etc.) to the Government for Approval (GA) or For Information Only (FIO). Items from different Sections cannot be submitted on the same ENG Form 4025. When furnishing one or more items from the same Section at a given time, a single ENG Form 4025 can be used to identify and submit these items. Block 'b' of the 4025 entitled "DESCRIPTION OF ITEM SUBMITTED" should provide an accurate and unique description of each item being proposed by the Contractor. Item numbers (block "a" of the 4025 entitled "ITEM NO.") will be automatically generated in QCS for each ENG Form 4025. QCS will track and

automatically generate the “ITEM NO.” for all following ENG Form 4025s for the same Section number. To illustrate, a transmittal for the 65% Design Submittal required by Section 01335 might have the following Items:

ITEM NO. 1	Topographic Information
ITEM NO. 2	Geotechnical Report
ITEM NO. 3	Foundation Design
ITEM NO. 4	65% Plans
ITEM NO. 5	Outline of Construction Specifications to be used

If this was the first submittal furnished by the Contractor for Section 01335, then a Transmittal Number of 01335-1 would be generated using QCS. As new transmittals are generated in QCS, the last digit of the transmittal is increased incrementally, as follows:

Transmittal No. 01335-2  
Transmittal No. 01335-3  
Transmittal No. 01335-4

and so forth. The first transmittal submitted from each Specification Section will be “-1”, in other words, there will never be a “Transmittal No. 01335-0”.

The above illustration is true for all other Specification Sections included in the Request for Proposal or in the Construction Specifications compiled by the Contractor in the prosecution of work under the RFP.

#### 3.6.3.3 Resubmittals

Should the Contractor be required to resubmit any transmittal due to one or more items on that transmittal being Coded “C” (Cleared for Construction, except as noted in attached comments, Resubmission Required) or “E” (NOT Cleared for Construction, see attached comments, resubmission required) by the Government, QCS will be used to generate the same transmittal number followed by the number “-1” for the first resubmittal, “-2” for the second resubmittal, “-3” for the third resubmittal, etc.

As an example, assume the 65% Design Submittal is provided to the Government as Transmittal 01335-9. Due to omissions or errors in that Submittal which result in a Code “E” being given, then the subsequent 65% Design Resubmittal #1 would be “Transmittal 01335-9.1”. Should a resubmittal again be necessary, it would be Design Resubmittal #2 and would be submitted as “Transmittal 01335-9.2”.

The purpose of this system is to avoid deviations from the Submittal Register and to track submittals in both RMS and DrChecks<sub>SM</sub>. It should be noted that a new transmittal number following the above system CANNOT be generated in QCS unless the prior transmittal has been given a Code. If the Contractor is having difficulty generating the correct transmittal number, contact the COR to resolve the matter.

The Contractor use the above nomenclature and date of submission to the Government for Plan Cover Sheets; title blocks for all drawings; all Specification Cover Sheets; all specification pages; all Design Analysis Cover Sheets and associated pages; and similar labeling for all other documents included in the submittal.

See the attachment titled “SITE ADAPT 1335a-Attachments-AED.pdf” (Figures 1-4) for required Title Block Required Annotations drawing guidance.

#### 3.6.4 Variations

If design or construction submittals show variations from the contract parameters and/or requirements, the Contractor shall justify such variations in writing, at the time of submission. Additionally, the Contractor shall also annotate block “h” entitled “variation” of ENG FORM 4025. After design submittals have been reviewed

and cleared for construction by the Contracting Officer, no resubmittal for the purpose of substituting materials, equipment, systems, and patented processes will be considered unless accompanied by the following:

- a. Reason or purpose for proposed variation, substitution, or revision.
- b. How does quality of variation compare with quality of the specified item? This shall be in the form of a technical evaluation tabulating differences between the item(s) originally specified and what is proposed.
- c. Provide a cost comparison. This shall include an acquisition and life cycle cost comparison.
- d. For proprietary materials, products, systems, and patented processes a certification signed by an official authorized to certify in behalf of the manufacturing company that the proposed substitution meets or exceeds what was originally specified.
- e. For all other actions, a certification signed by a licensed professional engineer or architect certifying that the proposed variation or revision meets or exceeds what was originally specified.
- f. Advantage to the Government, if variation is approved, i.e. Operation and Maintenance considerations, better product, etc.
- g. Ramifications and impact, if not approved.

If the Government review detects any items not in compliance with contract requirements or items requiring further clarification, the Contractor will be so advised. Lack of notification by the Contracting Officer of any non-complying item does not relieve the Contractor of any contractual obligation.

### 3.6.5 Non-Compliance

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the worksite, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

## 3.7 REVIEW OF CONTRACTOR PREPARED DESIGN DOCUMENTS

### 3.7.1 General

The work under contract will be subject to continuous review by representatives of the Contracting Officer. Additionally, joint design review conferences with representation by all organizations having a direct interest in the items under review may be held. The Contractor shall furnish copies of all drawings and related documents to be reviewed at the review conference on or before the date indicated by the Government. Additional conferences pertaining to specific problems may be requested by the Contractor or may be directed by the Contracting Officer as necessary to progress the work. The Contractor shall prepare minutes of all conferences and shall furnish two copies to the Contracting Officer within seven (7) days after the conference.

### 3.7.2 Independent Design Review

The Contractor shall have someone other than the Designer or Design Team perform an independent technical review of all specifications, drawings, design analysis, calculations, and other required data prior to submission to the Government. This review shall insure the professional quality, technical accuracy, and the coordination of all design analysis, drawings and specifications, and other services furnished under this contract have been accomplished. Work must be organized in a manner that will assure thorough coordination between various

details on drawings, between the various sections of the specifications, and between the drawings and specifications. The Contractor shall thoroughly cross-check and coordinate all work until he is professionally satisfied that no conflicts exist, vital information has not been omitted, and that indefinite language open to interpretation has been resolved. Upon completion of this review, the Contractor shall certify that each design submittal is complete, accurate, is in strict conformance with all contract requirements, that repetition has been avoided, that all conflicts have been resolved, and that the documents have thoroughly coordinated and cross checked against all the applicable disciplines to prevent the omission of vital information.

### 3.7.3 Contractor's Quality Control Organization Review

The Contractor shall thoroughly review each submittal prior to submission to the Contracting Officer to assure it is complete, correct and unified. This review shall be for the purposes of eliminating errors, interferences, and inconsistencies, and of incorporating design criteria, review comments, specifications, and any additional information required. The Contractor will give evidence of such review of all items in each submittal ENG Form 4025, by annotating Column "g" (titled "For Contractor Use Code") of this Form with the letter "A," meaning the Contractor has reviewed it and is indicating it is "Approved as Submitted". Design submittals submitted to the Contracting Officer without evidence of the above requirements or the Contractor's certified approval will be returned for resubmission. No part of the time lost due to such resubmissions shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

### 3.7.4 Government Review

- a. Within 14 days after Notice to Proceed, the Contractor shall submit, for approval, a complete design schedule with all submittals and review times indicated in calendar dates. The Contractor shall update this schedule monthly. After receipt, the Government will be allowed fourteen (14) full days to review and comment on all Design Submittals, except as noted below. This time period starts on the next full day after delivery of the Design Submittal to AED.
- b. If a design submittal is deficient (errors on ENG Form 4025; incorrect drawing title block information; missing or incomplete features required in the submittal; etc.), it will be returned immediately without further review for correction and resubmission. The review time will begin when the corrected submittal is received. The Contractor may be liable for liquidated damages owed to the Government for returned design submittals due to deficiencies.
- c. The contractor shall not begin construction work until the Government has reviewed the Contractor's Design Submittal and cleared it for construction. Clearance for construction does not mean Government approval. Government review shall not be construed as a complete check but will evaluate the general design approach and adherence to contract parameters. The Government Review is often limited in time and scope. Therefore, the Contractor shall not consider any review performed by the Government as an excuse for incomplete work.
- d. Upon completion of the review the Contractor will be notified by the Contracting Officer Representative that the DrChecks<sub>SM</sub> file is open for viewing and response to AED comments. The Contracting Officer will indicate whether the Design Submittal, or portions thereof, has or has not been cleared for construction using the following action codes:
  - A – Cleared for Construction
  - B – Cleared for Construction, except as noted in attached comments
  - C – Cleared for Construction, except as noted in attached comments, resubmission required
  - E – NOT Cleared for Construction, see attached comments, resubmission required

FX – Receipt acknowledged, does not comply as noted with contract requirements.

These codes shall NOT be used by the Contractor.

Design submittals Cleared for Construction by the Contracting Officer shall not relieve the Contractor from responsibility for any design errors or omissions and any liability associated with such errors, nor from responsibility for complying with the requirements of this contract.

#### 3.7.4.1 Incorporation of Government Review Comments

- a. The Contractor shall review each comment, furnish a complete response in DrChecks<sub>SM</sub> as to how the comment will be addressed in the Design Analysis, Plans and Specifications, or other Design Submittal stipulations required in this Contract. The Contractor will then incorporate each comment into the design submittal along with other work required at the next Design Submittal stage. The Contractor shall furnish disposition of all comments in DrChecks<sub>SM</sub>, with the next scheduled submittal. The disposition shall identify action taken with citation of location within the relevant design document. Generalized statements of intention such as "will comply" or "will revise the specification" are not acceptable. During the design review process, comments will be made on the design submittals that will change the drawings and specifications. The Government will make no additional payments to the Contractor for the incorporation of comments. Review comments are considered part of the contract administration process.
- b. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he must clearly outline, with ample justification, the reasons for noncompliance within five (5) days after close of review period in order that the comment can be resolved.
- c. The Contractor is cautioned that if he believes the action required by any comment exceeds the requirements of this contract, he should flag the comment in DrChecks<sub>SM</sub> as a scope change, and notify the COR in writing immediately.
- d. If a design submittal is over one (1) day late in accordance with the latest design schedule, the Government review period may be extended 7 days. Submittal date revisions must be made in writing at least five (5) days prior to the submittal.

#### 3.7.4.2 Conferences

As necessary, conferences will be conducted between the Contractor and the Government to resolve review comments.

A review conference may be held at the completion of AED review and subsequent Contractor response for each design submittal. The review conference will be held at the Corps District Office in Kabul, Afghanistan. The Contractor shall bring the personnel that developed the design submittal to the review conference.

#### 3.7.4.3 Design Deficiencies

Design deficiencies noted by the Government shall be corrected prior to the start of design for subsequent features of work which may be affected by, or need to be built upon, the deficient design work.

#### 3.7.5 Design Discrepancies

The Contractor shall be responsible for the correction of incomplete design data, omissions, and design discrepancies which become apparent during construction. The Contractor shall provide the Contracting Officer with a proposed recommendation for correcting a design error, within three (3) calendar days after notification by the Contracting Officer. The Contracting Officer will notify the Contractor of any detected noncompliance

with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the worksite, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor. Should extensions of design, fabrication plans and/or specific manufacturer's details be required as a result of a Government issued Change Order, the Government will make an equitable adjustment in accordance with Contract Clause 52.243-4 entitled CHANGES.

### 3.8 Phased or "Fast-Track" Design

#### 3.8.1 General

If approved by the Government, design and construction sequencing may be effected on an incremental basis as each approved phase or portion (e.g., demolition, geotechnical, site work, exterior utilities, foundations, substructure, superstructure, exterior closure, roofing, interior construction, mechanical, electrical, etc.) of the design is completed.

#### 3.8.2 Sequence of Design-Construction (Fast-Track)

After receipt of the Contract Notice to Proceed (NTP) the Contractor shall initiate design, comply with all design submission requirements and obtain Government review of each submission. The contractor may begin construction on portions of the work for which the Government has reviewed the final design submission and has determined satisfactory for purposes of beginning construction. The Contracting Officer will notify the Contractor when the design is cleared for construction. The Government will not grant any time extension for any design resubmittal required when, in the opinion of the Government, the initial submission failed to meet the minimum quality requirements as set forth in the contract.

#### 3.8.3 Notice-to-Proceed for Limited Construction

If the Government allows the Contractor to proceed with limited construction based on pending minor revisions to the reviewed Final Design submission, no payment will be made for any in-place construction related to the pending revisions until they are completed, resubmitted and are satisfactory to the Government.

#### 3.8.4 In-Place Construction Payment

No payment will be made for any in-place construction until all required submittals have been made, reviewed and are satisfactory to the Government.

#### 3.8.5 Commencement of Construction

Construction of work may begin after receipt of the clearance for construction (Notice to Proceed) for each design phase. Any work performed by the Contractor prior to receipt of the clearance for construction, shall be at the Contractor's own risk and expense. Work cleared for construction that does not conform to the design parameters and/or requirements of this contract shall be corrected by the Contractor at no additional cost or time to the Government.

### 3.9 Conduct of Work

#### 3.9.1 Performance

Perform the work diligently and aggressively, and promptly advise the Contracting Officer of all significant developments.

#### 3.9.2 Telephone Conversations

Prepare a summary, and promptly furnish a copy thereof to the Contracting Officer, of all telephone conversations relating to the design work under this contract.

### 3.9.3 Cooperation with Others

Cooperate fully with other firms, consultants and contractors performing work under the program to which this contract pertains, upon being advised by the Contracting Officer that such firms or individuals have a legitimate interest in the program, have need-to-know status, and proper security clearance where required.

### 3.9.4 Technical Criteria

All designs, drawings, and specifications shall be prepared in accordance with the contract documents and with the applicable publications referenced therein. As soon as possible, the Contractor shall obtain copies of all publications applicable to this contract. Availability of publications (where to purchase) is contained in Specification Section 01420 entitled: SOURCES FOR REFERENCE PUBLICATIONS. Any deviations from the technical criteria contained in the contract documents or in the applicable publications, including the use of criteria obtained from the user or other sources, must receive prior approval of the Contracting Officer. Where the technical criteria contained or referred to herein are not met, the Contractor will be required to conform his design to the same at his own time and expense.

### 3.9.5 Conflicts

Any conflicts, ambiguities, questions or problems encountered by the Contractor in following the criteria shall be immediately submitted in writing to the Contracting Officer with the Contractor's recommendations. Prior to submission to the Government the Contractor shall take appropriate measures to obtain clarification of design criteria requirements, to acquire all pertinent design information, and to incorporate such information in the work being performed.

### 3.9.6 Design Priorities

The design of this project shall consider the remote location and harsh environment of this project and the impact this will have on sources of technical supply, the cost of construction, the low level of maintenance, and the difficulty of obtaining replacement parts. Unless stated otherwise in this contract, the following design priorities shall be followed.

#### 3.9.6.1 Construction Life Span

Permanent Construction. Buildings and facilities shall be designed and constructed to serve a life expectancy of more than 25 years, to be energy efficient, and to have finishes, materials, and systems that are low maintenance and low life cycle cost.

#### 3.9.6.2 Operability

Systems including but not necessarily limited to mechanical, electrical, communications, etc., must be simple to operate and easy to maintain.

#### 3.9.6.3 Standardization

Use of standardized materials, products, equipment, and systems is necessary to minimize the requirements for replacement parts, storage facilities, and service requirements.

#### 3.9.6.4 Topographic Surveys, Easements, and Utilities

Unless otherwise stated in the contract, the Contractor will be responsible for detailed topographic mapping, available easements, and utility information for the project.

#### 3.9.6.5 Horizontal and Vertical Control

The mapping shall be based on the base coordinate system. If the base system cannot be found, the surveyor shall use any established monuments. If monuments have been destroyed or do not exist, an assumed horizontal and vertical datum shall be established, using arbitrary coordinates of 10,000n and 10,000e and an elevation of 1,000 meters. The horizontal and vertical control established on site shall be a closed loop with third order accuracy and procedures. Provide three (3) concrete survey monuments at the survey site. All of the control points established at the site shall be plotted at the appropriate coordinate point and shall be identified by name or number, and adjusted elevations. The location of the project site, as determined by the surveyor shall be submitted in writing to the Contracting Officer. The site location shall be identified by temporary markers, approved by the Contracting Officer before proceeding with the surveying work.

#### 3.9.6.6 Topography Requirements

A sufficient quantity of horizontal and vertical control shall be established to provide a detailed topographic survey at 1:500 scale with one quarter meter contour intervals minimum. Intermediate elevations shall be provided as necessary to show breaks in grade and changes in terrain.

The contours shall accurately express the relief detail and topographic shapes. In addition, 90 percent of the elevations or profiles interpolated from the contours shall be correct to within one-half of the contour interval and spot elevations shall be correct within plus or minus 20 millimeters.

Spot elevations affecting design of facilities shall be provided. Specifically, break points or control points in grades of terrain such as tops of hills, bottoms of ditches and gullies, high bank elevations, etc.

All surface and sub-surface structures features within the area to be surveyed shall be shown and identified on the topographic maps. In addition, these features shall be located by sufficient distance ties and labeled on the topographic sheets to permit accurate scaling and identification.

The location and sizes of potable, sanitary, electrical and mechanical utilities within the survey site shall be shown on the survey map. Sanitary manholes and appurtenances shall show top elevations and invert elevations.

#### 3.9.7 Occupational Safety and Health Act

The facilities, systems, and equipment designed under this contract shall comply with the Occupational Safety and Health Act (OSHA), Code of Federal Regulations, Title 29, Chapter XVII, Parts 1910 and 1926. Any problems in incorporating these standards due to conflicts with other technical criteria shall be submitted to the Contracting Officer for resolution.

#### 3.9.8 Asbestos Containing Materials

Asbestos containing material (ACM) will not be used in the design of new structures or systems. In the event no other material is available which will perform the required function or where the use of other material would be cost prohibitive, a waiver for the use of asbestos containing materials must be obtained from AED.

##### 3.9.8.1 Existing Construction

Asbestos containing materials (ACM) presently included in existing construction to be rehabilitated or otherwise modified as a result of this project shall be removed and a non-asbestos containing material substituted in lieu thereof.



### 3.9.8.2 Suspected Asbestos Containing Materials

All such structures and systems shall be inspected to determine the presence or probable presence of ACM. When ACM is suspected, a documented survey will be performed. The survey will be developed into an abatement design and will be made a part of the design documents. In the event no other material is available which will perform the required function or the use of a substitute material would be cost prohibitive due to initial cost and tear-out of existing construction, a waiver for the retention of the asbestos containing material must be obtained from the Contracting Officer.

### 3.10 VALUE METHODOLOGY/VALUE ENGINEERING

The Contractor during the course of his design shall be alert for and shall identify those high-cost low-value items or areas which he considers may be accomplished in different ways that will increase the value of the project at the same or less cost. Potential value engineering study items shall be reported to the Value Engineer through the Contracting Officer.

#### 3.10.1 Performance Oriented Value Engineering Change Proposal (VECP)

In reference to Contract Clause 52.248-3, "Value Engineering - Construction", the Government may refuse to entertain a "Value Engineering Change Proposal" (VECP) for those "performance oriented" aspects of the Contract Documents which were addressed in the Contractor's accepted contract proposal and which were evaluated in competition with other Proposers for award of this contract. For purposes of this clause, the term "performance oriented" refers to those aspects of the design criteria or other contract requirements which allow the Proposer or the Contractor certain latitude, choice of and flexibility to propose in its accepted contract offer a choice of design, technical approach, design solution, construction approach or other approach to fulfill the contract requirements. Such requirements generally tend to be expressed in terms of functions to be performed, performance required or essential physical characteristics, without dictating a specific process or specific design solution for achieving the desired result.

#### 3.10.2 Prescriptive Oriented Value Engineering Change Proposal (VECP)

The Government may consider a VECP for those "prescriptive" aspects of the Solicitation documents, not addressed in the Contractor's accepted contract proposal or addressed but evaluated only for minimum conformance with the Solicitation requirements. For purposes of this clause, the term "prescriptive" refers to those aspects of the design criteria or other Solicitation requirements wherein the Government expressed the design solution or other requirements in terms of specific materials, approaches, systems and/or processes to be used. Prescriptive aspects typically allow the Proposers little or no freedom in the choice of design approach, materials, fabrication techniques, methods of installation or other approach to fulfill the contract requirements.

### 3.11 ATTACHMENTS

The following attachments form an integral part of this specification:

ENG FORM 4025-R, Mar 95 - Transmittal of Shop Drawings, Equipment Data, Material Samples, or Manufacturer's Certificate of Compliance (2 pages)

ENG FORM 4288-R, Mar 95 - Submittal Register

Figure 1 – AED Title Block

Figure 2 – AED Management Block

Figure 3 – AED Issue Block & Required Notations

-- End of Section 01335 -

SECTION 01415

**SECTION 01415**

**METRIC MEASUREMENTS**

**1.1 REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM E 621	(1994; R 1999e1) Use of Metric (SI) Units in Building Design and Construction (Committee E-6 Supplement to E380)
------------	--

ASTM SI 10	(2002) American National Standard for Use of the International System of Units (SI): The Modern Metric System
------------	---

**1.2 GENERAL**

This project includes metric units of measurements. The metric units used are the International System of Units (SI) developed and maintained by the General Conference on Weights and Measures (CGPM); the name International System of Units and the international abbreviation SI were adopted by the 11th CGPM in 1960. A number of circumstances require that both metric SI units and English inch-pound (I-P) units be included in a section of the specifications. When both metric and I-P measurements are included, the section may contain measurements for products that are manufactured to I-P dimensions and then expressed in mathematically converted metric value (soft metric) or, it may contain measurements for products that are manufactured to an industry recognized rounded metric (hard metric) dimensions but are allowed to be substituted by I-P products to comply with the law. Dual measurements are also included to indicate industry and/or Government standards, test values or other controlling factors, such as the code requirements where I-P values are needed for clarity or to trace back to the referenced standards, test values or codes.

**1.3 USE OF MEASUREMENTS IN SPECIFICATIONS**

Measurements in specifications shall be either in SI or I-P units as indicated, except for soft metric measurements or as otherwise authorized. When only SI or I-P measurements are specified for a product, the product shall be procured in the specified units (SI or I-P) unless otherwise authorized by the Contracting Officer. The Contractor shall be responsible for all associated labor and materials when authorized to substitute one system of units for another and for the final assembly and performance of the specified work and/or products.

**1.3.1 Hard Metric**

A hard metric measurement is indicated by an SI value with no expressed correlation to an I-P value. Hard metric measurements are often used for field data such as distance from one point to another or distance above the floor. Products are considered to be hard metric when they are manufactured to metric dimensions or have an industry recognized metric designation.

### 1.3.2 Soft Metric

a. A soft metric measurement is indicated by an SI value which is a mathematical conversion of the I-P value shown in parentheses (e.g. 38.1 mm (1-1/2 inches)). Soft metric measurements are used for measurements pertaining to products, test values, and other situations where the I-P units are the standard for manufacture, verification, or other controlling factor. The I-P value shall govern while the metric measurement is provided for information.

b. A soft metric measurement is also indicated for products that are manufactured in industry designated metric dimensions but are required by law to allow substitute I-P products. These measurements are indicated by a manufacturing hard metric product dimension followed by the substitute I-P equivalent value in parentheses (e.g., 190 x 190 x 390 mm (7-5/8 x 7-5/8 x 15-5/8 inches)).

### 1.3.3 Neutral

A neutral measurement is indicated by an identifier which has no expressed relation to either an SI or an I-P value (e.g., American Wire Gage (AWG) which indicates thickness but in itself is neither SI nor I-P).

## 1.4 COORDINATION

Discrepancies, such as mismatches or product unavailability, arising from use of both metric and non-metric measurements and discrepancies between the measurements in the specifications and the measurements in the drawings shall be brought to the attention of the Contracting Officer for resolution.

## 1.5 RELATIONSHIP TO SUBMITTALS

Submittals for Government approval or for information only shall cover the SI or I-P products actually being furnished for the project. The Contractor shall submit the required drawings and calculations in the same units used in the contract documents describing the product or requirement unless otherwise instructed or approved. The Contractor shall use ASTM SI 10 and ASTM E 621 as the basis for establishing metric measurements required to be used in submittals.

-- End of Section 01415 -

## SECTION 01451

### **SPECIFICATION SECTION 01451**

### **CONTRACTOR QUALITY CONTROL**

#### **PART 1: GENERAL**

#### **1.1 REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ARMY CORPS OF ENGINEERS (USACE)

## **1.2 PAYMENT**

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

## **PART 2 PRODUCTS (Not Applicable)**

## **PART 3 EXECUTION**

### **3.1 GENERAL REQUIREMENTS**

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clauses and this specification section. The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

### **3.2 QUALITY CONTROL PLAN**

The Contractor shall furnish for review by the Government, not later than five (5) days after receipt of Notice-to-Proceed (NTP) the proposed Contractor Quality Control (CQC) Plan. The plan shall identify personnel, procedures, control, instructions, records, and forms to be used.

#### **3.2.1 Content of the CQC Plan**

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both on site and off-site, including work by subcontractors, fabricators, suppliers and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, consultants, and purchasing agents. These procedures shall be

in accordance with Specification 01335 SUBMITTAL PROCEDURES.

- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test.
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

#### 3.2.2 Not Used.

#### 3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in the CQC plan and operations including removal of personnel, as necessary, to obtain the quality specified.

#### 3.2.4 Notification of Changes

Notification of Changes. After acceptance of the QC plan, the Contractor shall notify the Contracting Officer in writing a minimum of seven calendar days prior to any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

### 3.3 COORDINATION MEETING

After the Pre-construction Conference, before start of construction, and prior to acceptance by the Government of the Quality Control Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 5 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both on-site and off-site work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures, which may require corrective action by the Contractor.

### 3.4 QUALITY CONTROL ORGANIZATION

#### 3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager, and sufficient number of additional qualified personnel to ensure safety and contract compliance. Personnel identified in the technical provisions as

requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, shop drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

#### 3.4.2 CQC System Manager

The Contractor shall identify an individual within his organization at the site of the work who shall be responsible for overall management of the CQC and have the authority to act in all CQC matters for the Contractor. The CQC system manager shall be a graduate engineer, graduate architect, or a graduate construction manager, with experience on construction projects similar in type to this contract OR a construction person with a minimum of ten (10) years in related work. The CQC System Manager shall be on the site at all times during construction and shall be employed by the Contractor. The CQC System Manager shall be assigned no other duties. An alternate for the CQC System Manager will be identified in the plan to serve in the event of the CQC system manager's absence. The requirements for the alternate will be the same as for the designated CQC manager.

#### 3.4.3 Not Used.

#### 3.4.4 Additional Requirement

In addition to the above experience and/or education requirements, the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is periodically offered by the government, and inquiries as to the next course offering may be directed to the local construction field office.

#### 3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

### 3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in the STR titled SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

### 3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of the construction work as follows:

#### 3.6.1 Preparatory Phase.

This phase shall be performed prior to beginning work on each definable feature of work, after all required documents and materials are approved/accepted, and after copies are at the work site. This phase shall include:

a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards, in the English language unless specifically approved otherwise by the Contracting Officer, applicable to that portion of the work to be accomplished in the field shall be made available by

the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.

- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. A check to assure that provisions have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to verify that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. Reviews of the appropriate activity hazard analysis to ensure safety requirements are met.
- h. Discussion of procedures for constructing the work including repetitive deficiencies, construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the Contracting Officer has accepted the portion of the plan for the work to be performed.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 24 hours in advance of beginning any of the required action of the preparatory phase. This phase shall include a meeting conducted by the CQC system manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC system manager and attached to the daily QC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

#### 3.6.2 Initial Phase.

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of preliminary work to ensure that it is in compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verification of full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC system manager and attached to the daily QC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.
- g. The initial phase should be repeated for each new crew to work on-site, or any time acceptable specified quality standards are not being met.

#### 3.6.3 Follow-up Phase.

Daily checks shall be performed to assure continuing compliance with contract requirements, including control testing, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted, and all noted deficiencies corrected, prior to the start of additional features of work that may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

#### 3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases may be required by the Contracting Officer on the same definable features of work if the quality of on-going work is unacceptable; if there are changes in the applicable QC staff or in the on-site production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

### 3.7 TESTS

#### 3.7.1 Testing Procedure

The Contractor shall perform tests specified or required to verify that control measures are adequate to provide a product that conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Costs incidental to the transportation of samples or materials shall be borne by the Contractor.

Testing includes operation and/or acceptance tests when specified. A list of tests to be performed shall be furnished as a part of the CQC plan. The list shall give the test name, frequency, specification paragraph containing the test requirements, the personnel and laboratory responsible for each type of test, and an estimate of the number of tests required. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the Quality Control report for the date taken. Specification paragraph/item reference, location where tests were taken, and the sequential control number identifying the test will be given. Actual test reports may be submitted later, if approved by the Contracting Officer, with a reference to the test number and date taken. An information copy of tests performed by an off-site or commercial test facility will be provided directly to the Contracting Officer. Failure to submit timely test reports, as stated, may result in nonpayment for related work performed and disapproval of the test facility for this contract.

### 3.8 COMPLETION INSPECTION

#### 3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the SPECIAL CONTRACT REQUIREMENTS Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.



### 3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

### 3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

## 3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility
- b. Operating plant/equipment with hours worked, idle, or down for repair
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and

deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within forty-eight (48) hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

### **3.10 SAMPLE FORMS**

In accordance with Specification 01312 QUALITY CONTROL SYSTEM, the contractor shall use the forms produced by and printed from QCS. Samples of any forms required to meet the requirements of this section which are not produced by that system shall be included in the contractors Quality Control Plan.

### **3.11 NOTIFICATION OF NONCOMPLIANCE**

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

-- End of Section 01451 --

SECTION 01525

SECTION 01525

## **SECTION 01525**

### **SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS**

#### **PART 1 GENERAL**

For contractor safety on projects associated with this program, compliance with EM 385-1-1 safety requirements will be the long-term goal reached by growing a safety culture. This compliance will, by necessity, be achieved through a phased-in process. In the Commander's letter at the preface of the EM 385-1-1, he acknowledges that in OCONUS locations, strict compliance with the manual may not be possible – and through the hazard analysis process, safety measures can be developed to attain the same degree of safety.

This specification consists of two parts:

- 1) Sections 1.1 through 3.12.1, which are the standard safety specifications for work in Europe District and;
- 2) Appendix A, Phasing approach for safety in emerging countries where there is little or no national safety standards.

## **1.1 REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

### **AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)**

ANSI A10.32	Personal Fall Protection - Safety Requirements for Construction and Demolition Operations
ANSI Z359.1(1992; R 1999)	Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components
ANSI/ASSE A10.34(2001)	Protection of the Public on or Adjacent to Construction Sites
ASME B30.3(1996)	Construction Tower Cranes

### **ASME INTERNATIONAL (ASME)**

ASME B30.22(2000)	Articulating Boom Cranes
ASME B30.5(2004)	Mobile and Locomotive Cranes

### **NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)**

NFPA 10(2002)	Portable Fire Extinguishers
NFPA 241(2000)	Safeguarding Construction, Alteration, and Demolition Operations
NFPA 51B(2003)	Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA 70(2005)	National Electrical Code
NFPA 70E(2004)	Electrical Safety in the Workplace

### **U.S. ARMY CORPS OF ENGINEERS**

EM 385-1-1(2003)	Safety Safety and Health Requirements
------------------	---------------------------------------

### **U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)**

29 CFR 1910	Occupational Safety and Health Standards (OSHA)
29 CFR 1910.146	Permit-required Confined Spaces
29 CFR 1915	Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment

29 CFR 1919	Gear Certification
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.500	Fall Protection

## **1.2 SUBMITTALS**

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with SR SUBMITTAL PROCEDURES:

### **SD-01 Preconstruction Submittals**

Accident Prevention Plan (APP); G, ACC

Activity Hazard Analysis (AHA); G, ACC

Crane Critical Lift Plan; G, ACC

Proof of qualification for Crane Operators; G, ACC

### **SD-06 Test Reports**

Reports: Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."

Accident Reports

Monthly Exposure Reports

Crane Reports

Regulatory Citations and Violations

### **SD-07 Certificates**

Confined Space Entry Permit

Contractor Safety Self-Evaluation Checklist; G, ACC

Submit one copy of each permit/certificate attached to each Daily Quality Control Report.

## **1.3 DEFINITIONS**

- a. Competent Person for Fall Protection. A person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as their application and use with related equipment, and has the authority to take prompt corrective measures to eliminate the hazards of falling.

- b. High Visibility Accident. Any mishap which may generate publicity and/or high visibility.
- c. Medical Treatment. Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.
- d. Qualified Person for Fall Protection. A person with a recognized degree or professional certificate, extensive knowledge, training and experience in the field of fall protection who is capable of performing design, analysis, and evaluation of fall protection systems and equipment.
- e. Recordable Injuries or Illnesses. Any work-related injury or illness that results in:
  - (1) Death, regardless of the time between the injury and death, or the length of the illness;
  - (2) Days away from work (any time lost after day of injury/illness onset);
  - (3) Restricted work;
  - (4) Transfer to another job;
  - (5) Medical treatment beyond first aid;
  - (6) Loss of consciousness; or
  - (7) A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.
- f. "USACE" property and equipment specified in USACE EM 385-1-1 should be interpreted as Government property and equipment.

#### **1.4 DRUG PREVENTION PROGRAM**

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employee uses illegal drugs or consumes alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine, or saliva specimens and test the injured and involved employees for the influence of drugs and alcohol. A copy of the test shall be made available to the Contracting Officer upon request.

#### **1.5 REGULATORY REQUIREMENTS**

In addition to the detailed requirements included in the provisions of this contract, work performed shall comply with USACE EM 385-1-1, and in particular, the requirements of the European Union Council Directive 92/57/EEC of 24 June 1992 on the implementation of minimum safety and health requirements at temporary or mobile construction sites. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

## **1.6 SITE QUALIFICATIONS, DUTIES AND MEETINGS**

### **1.6.1 Personnel Qualifications**

#### **1.6.1.1 Site Safety and Health Officer (SSHO)**

Site Safety and Health Officer (SSHO) shall be provided at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The Contractor Quality Control (QC) person can only be the SSHO on this project if approved by the Contracting Officer. Any project exceeding 1 Million US dollars in value shall have a full time SSHO. The SSHO shall meet the following requirements: A minimum of 5 years safety work on similar projects; 30-hour OSHA construction safety class or European Union equivalent within the last 5 years; an average of at least 24 hours of formal safety training each year for the past 5 years. Competent person training as needed.

#### **1.6.1.2 Competent Person for Confined Space Entry**

Provide a competent person meeting the requirements of EM 385-1-1 who is assigned in writing by the Government Designated Authority (GDA) to assess confined spaces and who possesses demonstrated knowledge, skill and ability to:

- a. Identify the structure, location, and designation of confined and permit-required confined spaces where work is done;
- b. Calibrate and use testing equipment including but not limited to, oxygen indicators, combustible gas indicators, carbon monoxide indicators, and carbon dioxide indicators, and to interpret accurately the test results of that equipment;
- c. Perform all required tests and inspections specified in Section 06.I of EM 385-1-1;
- d. Assess hazardous conditions including atmospheric hazards in confined space and adjacent spaces and specify the necessary protection and precautions to be taken;
- e. Determine ventilation requirements for confined space entries and operations;
- f. Assess hazards associated with hot work in confined and adjacent space and determine fire watch requirements; and,
- g. Maintain records required.

#### **1.6.1.3 Crane Operators**

Crane operators shall meet the requirements in USACE EM 385-1-1, Section 16 and Appendix G. In addition, crane operators shall be designated as qualified by a source that qualifies crane operators (i.e., union, a government agency, or an organization that tests and qualifies crane operators). Proof of current qualification shall be provided.

### **1.6.2 Personnel Duties**

#### 1.6.2.1 Site Safety and Health Officer (SSHO)/Superintendent

- a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractors' daily quality control report
- b. Conduct mishap investigations and complete required reports. Maintain an accident/injury log such as the OSHA Form 300 or host nation equivalent, and Daily Production reports for prime and sub-contractors.
- c. Maintain applicable safety reference material on the job site.
- d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.
- e. Implement and enforce accepted APPS and AHAs.
- f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. A list of unresolved safety and health deficiencies shall be posted on the safety bulletin board.
- g. Ensure sub-contractor compliance with safety and health requirements.

Failure to perform the above duties will result in dismissal of the superintendent and/or SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

#### 1.6.3 Meetings

##### 1.6.3.1 Preconstruction Conference

- a. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).
- b. The Contractor shall discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of AHAs shall be established to preclude project delays.
- c. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Work shall not begin until there is an accepted APP.
- d. The functions of a Preconstruction conference may take place at the Post-Award Kickoff meeting for Design Build Contracts.

#### 1.6.3.2 Safety Meetings

Shall be conducted and documented as required by EM 385-1-1. Minutes showing contract title, signatures of attendees and a list of topics discussed shall be attached to the Contractors' daily quality control report.

### 1.7 TRAINING

#### 1.7.1 New Employee Indoctrination

New employees (prime and sub-contractor) will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

#### 1.7.2 Periodic Training

Provide Safety and Health Training in accordance with USACE EM 385-1-1 and the accepted APP. Ensure all required training has been accomplished for all onsite employees.

#### 1.7.3 Training on Activity Hazard Analysis (AHA)

Prior to beginning a new phase, training will be provided to all affected

### 1.8 ACCIDENT PREVENTION PLAN (APP)

The Contractor shall use a qualified person to prepare the written site-specific APP in both English and in the host nation language. Prepare the APP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Accident Prevention Plan". Specific requirements for some of the APP elements are described below. The APP shall be job-specific and shall address any unusual or unique aspects of the project or activity for which it is written. The APP shall interface with the Contractor's overall safety and health program. Any portions of the Contractor's overall safety and health program referenced in the APP shall be included in the applicable APP element and made site-specific. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP shall be signed by the person and firm (senior person) preparing the APP, the Contractor, the on-site superintendent, the designated site safety and health officer.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP.

Once accepted by the Contracting Officer, the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

Once work begins, changes to the accepted APP shall be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSO and quality control manager. Should any hazard become



evident, stop work in the area, secure the area, and develop a plan to remove the hazard. Notify the Contracting Officer within 24 hours of discovery. In the interim, all necessary action shall be taken to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public, and the environment.

Copies of the accepted plan will be maintained at the Contracting Officer's office and at the job site.

The APP shall be continuously reviewed and amended, as necessary, throughout the life of the contract. Unusual or high-hazard activities not identified in the original APP shall be incorporated in the plan as they are discovered.

#### 1.8.1 EM 385-1-1 Contents

In addition to the requirements outlines in Appendix A of USACE EM 385-1-1, the following is required:

- a. Names and qualifications (resumes including education, training, experience and certifications) of all site safety and health personnel designated to perform work on this project to include the designated site safety and health officer and other competent and qualified personnel to be. The duties of each position shall be specified.
- b. Qualifications of competent and of qualified persons. As a minimum, competent persons shall be designated and qualifications submitted for each of the following major areas: excavation; scaffolding; fall protection; hazardous energy; confined space; health hazard recognition, evaluation and control of chemical, physical and biological agents; personal protective equipment and clothing to include selection, use and maintenance.
- c. Confined Space Entry Plan. Develop a confined space entry plan in accordance with USACE EM 385-1-1, Section 06.I, and any other federal, state and local regulatory requirements identified in this contract. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)
- d. Crane Critical Lift Plan. Prepare and sign weight handling critical lift plans for lifts over 75 percent of the capacity of the crane or hoist (or lifts over 50 percent of the capacity of a barge mounted mobile crane's hoists) at any radius of lift; lifts involving more than one crane or hoist; lifts of personnel; and lifts involving non-routine rigging or operation, sensitive equipment, or unusual safety risks. The plan shall be submitted 15 calendar days prior to on-site work and include the requirements of USACE EM 385-1-1, paragraph 16.C.18. and the following:
  - (1) For lifts of personnel, the plan shall demonstrate compliance with the requirements of EM 385-1-1, Section 22.F.
  - (2) For barge mounted mobile cranes, barge stability calculations identifying barge list and trim based on anticipated loading; and load charts based on calculated list and trim. The amount of list and trim shall be within the crane manufacturer's requirements.
- e. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place and during different phases of construction. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 1.8 m (6 feet). A qualified person for fall protection shall prepare and sign the plan. The plan shall include fall protection and prevention systems, equipment and methods employed for every phase of work, responsibilities,

assisted rescue, self-rescue and evacuation procedures, training requirements, and monitoring methods. Fall Protection and Prevention Plan shall be revised every six months for lengthy projects, reflecting any changes during the course of construction due to changes in personnel, equipment, systems or work habits. The accepted Fall Protection and Prevention Plan shall be kept and maintained at the job site for the duration of the project. The Fall Protection and Prevention Plan shall be included in the Accident Prevention Plan (APP).

## **1.9 ACTIVITY HAZARD ANALYSIS (AHA)**

The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1, and shall be written in both English and the host nation language. Submit the AHA for review at least 15 calendar days prior to the start of each phase. Format subsequent AHAs as amendments to the APP. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.

The activity hazard analyses shall be developed using the project schedule as the basis for the activities performed. Any activities listed on the project schedule will require an AHA. The AHAs will be developed by the contractor, supplier or subcontractor and provided to the prime contractor for submittal to the Contracting Officer.

## **1.10 DISPLAY OF SAFETY INFORMATION**

Within 1 calendar day after commencement of work, erect a safety bulletin board at the job site. The safety bulletin board shall include information and be maintained as required by EM 385-1-1, section 01.A.06.

## **1.11 SITE SAFETY REFERENCE MATERIALS**

Maintain safety-related references applicable to the project. Maintain applicable equipment manufacturer's manuals.

## **1.12 EMERGENCY MEDICAL TREATMENT**

Contractors will arrange for their own emergency medical treatment. The Government has no responsibility to provide emergency medical treatment. Military medical clinics may provide emergency treatment for serious injuries; the contractor is responsible for coordination with the local military medical clinic prior to mobilization.

## **1.13 REPORTS**

### **1.13.1 Accident Reports**

For recordable injuries and illnesses, and property damage accidents resulting in at least \$2,000 in damages, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the USACE Accident Report Form 3394 and provide the report to the Contracting Officer within 5 calendar day(s) of the accident. The Contracting Officer will provide copies of any required or special forms.

### **1.13.2 Accident Notification**

Notify the Contracting Officer as soon as practical, but not later than four hours, after any accident meeting

the definition of Recordable Injuries or Illnesses or High Visibility Accidents, property damage equal to or greater than \$2,000. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted.

#### 1.13.3 Monthly Exposure Reports

Monthly exposure reporting to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The Contracting Officer will provide copies of any special forms.

#### 1.13.4 Crane Reports

Submit crane inspection reports required in accordance with USACE EM 385-1-1, Appendix H and as specified herein with Daily Reports of Inspections.

### 1.14 HOT WORK

Prior to performing "Hot Work" (welding, cutting, etc.) or operating other flame-producing/spark producing devices, a written permit shall be requested from the Installation. **CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED.** The Contractor will provide at least two (2) six kilogram ABC rated extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch shall be trained in fire fighting techniques and remain on-site for a minimum of 120 minutes after completion of the task or as specified on the hot work permit.

When starting work in the facility, Contractors shall require their personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency phone numbers. **ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE RESPONSIBLE FIRE DIVISION/DEPARTMENT IMMEDIATELY.**

### PART 2 PRODUCTS

Not used.

### PART 3 EXECUTION

#### 3.1 CONSTRUCTION AND/OR OTHER WORK

Before initiation of work at the job site, an accident prevention plan, written by the Contractor for the specific work and hazards of the contract and implementing in detail the pertinent requirements of EM 385-1-1, will be reviewed and found acceptable by designated Government personnel. Specific requirements for development of the accident prevention plan are found in sections 01.A and Appendix A of EM 385-1-1.

Before beginning each activity involving a type of work presenting hazards not experienced in previous project operations or where a new work crew or subcontractor is to perform the work, activity hazard analysis (AHA) shall be prepared by the Contractor performing the work activity. See paragraph 01.A.09 of EM 385-1-1.

The Contractor shall require subcontractors to submit their plan of operations showing methods they propose to use in accomplishing major phases of work.

The Contractor shall be prepared to discuss the plans in conferences convened by the Contracting Officer prior to starting work on each major phase of operation. Plans shall include all pertinent information such as layout of haul roads, access roads, storage areas, electrical distribution lines, methods of providing minimum exposure to overhead loads, and methods of access to work areas. The plan for accomplishing the initial work phase shall be submitted within 15 calendar days after award of the contract. Plans for subsequent major phases of work shall be submitted not later than 15 calendar days prior to initiation of work on each major phase.

All areas where construction, demolition, alteration, building, or similarly related activities take place, all workers shall have the following minimum personal protective clothing and equipment:

1. Short sleeve shirt.
2. Long trousers.
3. Steel-toed safety boots.
4. Hard hat.

#### 3.1.1 Falling Object Protection

All areas must be barricaded to safeguard employees. When working overhead, barricade the area below to prevent entry by unauthorized employees. Construction warning tape and signs shall be posted so they are clearly visible from all possible access points. When employees are working overhead all tools and equipment shall be secured so that they will not fall. When using guardrail as falling object protection, all openings shall be small enough to prevent passage of potential falling objects.

#### 3.1.2 Hazardous Material Use

Each hazardous material must receive approval prior to being brought onto the job site or prior to any other use in connection with this contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material. Any work or storage involving hazardous chemicals or materials must be done in a manner that will not expose Government or Contractor employees to any unsafe or unhealthful conditions. Adequate protective measures must be taken to prevent Government or Contractor employees from being exposed to any hazardous condition that could result from the work or storage. The Prime Contractor shall keep a complete inventory of hazardous materials brought onto the work-site. Approval by the Contracting Officer of protective measures and storage area is required prior to the start of the work.

#### 3.1.3 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with USACE EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials.

#### 3.1.4 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and non-friable asbestos. If material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

### **3.2 FALL HAZARD PROTECTION AND PREVENTION PROGRAM**

The Contractor shall establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. The program shall include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures.

#### **3.2.1 Training**

The Contractor shall institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, the Contractor shall provide training for each employee who might be exposed to fall hazards. A competent person for fall protection shall provide the training. Training requirements shall be in accordance with USACE EM 385-1-1, section 21.A.16.

#### **3.2.2 Fall Protection Equipment and Systems**

The Contractor shall enforce use of the fall protection equipment and systems designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is exposed to a fall hazard. Employees shall be protected from fall hazards as specified in EM 385-1-1, section 21. In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with USACE EM 385-1-1, paragraphs 05.H. and 05.I. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems are required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, or travel. Fall protection must comply with USACE EM 385-1-1 and host nation requirements, whichever is more stringent.

##### **3.2.2.1 Personal Fall Arrest Equipment**

Personal fall arrest equipment, systems, subsystems, and components shall meet ANSI Z359.1 or European Union equivalent. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Only locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 1.8 m (6 feet). The total fall distance and any swinging of the worker (pendulum-like motion) that can occur during a fall shall always be taken into consideration when attaching a person to a fall arrest system.

### 3.2.3 Fall Protection for Roofing Work

Fall protection controls shall be implemented based on the type of roof being constructed and work being performed. The roof area to be accessed shall be evaluated for its structural integrity including weight-bearing capabilities for the projected loading.

#### a. Low Sloped Roofs:

- (1) For work within 1.8 m (6 feet) of an edge, on low-slope roofs, personnel shall be protected from falling by use of personal fall arrest systems, guardrails, or safety nets. A safety monitoring system is not adequate fall protection and is not authorized.
- (2) For work greater than 1.8 m (6 feet) from an edge, warning lines shall be erected and installed in accordance with USACE EM 385-1-1.

b. Steep-Sloped Roofs: Work on steep-sloped roofs requires a personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.

### 3.2.4 Existing Anchorage

Existing anchorages, to be used for attachment of personal fall arrest equipment, shall be certified (or re-certified) by a qualified person for fall protection in accordance with ANSI Z359.1 or European Union equivalent. Existing horizontal lifeline anchorages shall be certified (or re-certified) by a registered professional engineer with experience in designing horizontal lifeline systems.

### 3.2.5 Horizontal Lifelines

Horizontal lifelines shall be designed, installed, certified and used under the supervision of a qualified person for fall protection as part of a complete fall arrest system which maintains a safety factor of 2.

### 3.2.6 Guardrails and Safety Nets

Guardrails and safety nets shall be designed, installed and used in accordance with EM 385-1-1 or Host Nation requirements, whichever is more stringent.

### 3.2.7 Rescue and Evacuation Procedures

When personal fall arrest systems are used, the contractor must ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. A Rescue and Evacuation Plan shall be prepared by the contractor and include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. The Rescue and Evacuation Plan shall be included in the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP).

## 3.3 SCAFFOLDING

Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Access to scaffold platforms greater than 6 m

in height shall be accessed by use of a scaffold stair system. Vertical ladders commonly provided by scaffold system manufacturers shall not be used for accessing scaffold platforms greater than 6 m in height. The use of an adequate gate is required. Contractor shall ensure that employees are qualified to perform scaffold erection and dismantling. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection and prevention plan. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given to ensure scaffold systems are not overloaded. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base. Work platforms shall be placed on mud sills. Scaffold or work platform erectors shall have fall protection during the erection and dismantling of scaffolding or work platforms that are more than six feet. Delineate fall protection requirements when working above six feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

### **3.4 EQUIPMENT**

#### **3.4.1 Material Handling Equipment**

- a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.
- b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.
- c. Operators of forklifts or power industrial trucks shall be trained/licensed in accordance with Host Nation requirements.

#### **3.4.2 Weight Handling Equipment**

- a. Cranes and derricks shall be equipped as specified in EM-385-1-1 section 16.
- b. The Contractor shall notify the Contracting Officer 15 days in advance of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated. Contractor's operator shall remain with the crane during the spot check.
- c. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person. All testing shall be performed in accordance with the manufacturer's recommended procedures.
- d. Under no circumstance shall a Contractor make a lift at or above 90% of the cranes rated capacity in any configuration.
- e. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of USACE EM 385-1-1 section 11.
- f. Crane suspended personnel work platforms (baskets) shall not be used unless the Contractor proves to the satisfaction of the Contracting Officer that using any other access to the work location would provide a greater hazard to the workers or is impossible. Personnel shall not be lifted with a line hoist or friction crane.

- g. Portable fire extinguishers shall be inspected, maintained, and recharged.
- h. All employees shall be kept clear of loads about to be lifted and of suspended loads.
- i. The Contractor shall use cribbing when performing lifts on outriggers.
- j. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.
- k. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.
- l. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall always be available for review by Contracting Officer personnel.
- m. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Contracting Officer personnel.
- n. Certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).
- o. Take steps to ensure that wind speed does not contribute to loss of control of the load during lifting operations. Prior to conducting lifting operations the contractor shall set a maximum wind speed at which a crane can be safely operated based on the equipment being used, the load being lifted, experience of operators and riggers, and hazards on the work site. This maximum wind speed determination shall be included as part of the activity hazard analysis plan for that operation.

### **3.5 EXCAVATIONS**

The competent person for excavations performed as a result of contract work shall be on-site when excavation work is being performed, and shall inspect, and document the excavations daily prior to entry by workers. The competent person must evaluate all hazards, including atmospheric, that may be associated with the work, and shall have the resources necessary to correct hazards promptly.

#### **3.5.1 Utility Locations**

Prior to any excavation, all underground utilities in the work area must be positively identified by the contractor utilizing a) a private utility locating service in addition to any station locating service, and/or b) a metal and/or cable-detecting device along the route of the excavation. All underground utilities discovered will be flagged a distance of one-half (1/2) meter on each side of the location, and any markings made during the utility investigation must be maintained throughout the contract.

Damage occurring to existing utilities, when the above procedures are not followed, will be repaired at the Contractor's expense.

#### **3.5.2 Utility Location Verification**



The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. Digging within 0.61 m (2 feet) of a known utility must not be performed by means of mechanical equipment; hand digging shall be used. If construction is parallel to an existing utility the utility shall be exposed by hand digging every 30.5 m (100 feet) if parallel within 1.5 m (5 feet) of the excavation.

### **3.5.3 Shoring Systems**

Trench and shoring systems must be identified in the accepted safety plan and AHA. Manufacturer tabulated data and specifications or registered engineer tabulated data for shoring or benching systems shall be readily available on-site for review. Job-made shoring or shielding shall have the registered professional engineer stamp, specifications, and tabulated data. Extreme care must be used when excavating near direct burial electric underground cables.

### **3.5.4 Trenching Machinery**

Trenching machines with digging chain drives shall be operated only when the spotters/laborers are in plain view of the operator. Operator and spotters/laborers shall be provided training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Documentation of the training shall be kept on file at the project site.

## **3.6 UTILITIES WITHIN CONCRETE SLABS**

Utilities located within concrete slabs or pier structures, bridges, and the like, are extremely difficult to identify due to the reinforcing steel used in the construction of these structures. Whenever contract work involves concrete chipping, saw cutting, or core drilling, the existing utility location must be coordinated with station utility departments in addition to a private locating service. Outages to isolate utility systems shall be used in circumstances where utilities are unable to be positively identified. The use of historical drawings does not alleviate the contractor from meeting this requirement.

## **3.7 ELECTRICAL**

### **3.7.1 Conduct of Electrical Work**

Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Contracting Officer and Station Utilities for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. In addition, provide electrical arc flash protection for personnel as required by NFPA 70E. Insulating blankets, hearing protection, and switching suits may also be required, depending

on the specific job and as delineated in the Contractor's AHA.

### **3.7.2 Portable Extension Cords**

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered and protected from damage. All damaged extension cords shall be immediately removed from service. Portable extension cords shall meet the requirements of NFPA 70 or European Union equivalent.

## **3.8 WORK IN CONFINED SPACES**

The Contractor shall comply with the requirements in Section 06.I of USACE EM 385-1-1. Any potential for a hazard in the confined space requires a permit system to be used.

- a. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See Section 06.I.06 of USACE EM 385-1-1 for entry procedures). All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.
- b. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained to ensure exposure to any hazardous atmosphere is kept below its' action level.
- c. Ensure the use of rescue and retrieval devices in confined spaces greater than 1.5 m (5 feet) in depth. Conform to Sections 06.I.08, 06.I.09 and 06.I.10 of USACE EM 385-1-1.
- d. Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.
- e. Include training information for employees who will be involved as entrants and attendants for the work. Conform to Section 06.I.07 of USACE EM 385-1-1.
- f. Daily Entry Permit. Post the permit in a conspicuous place close to the confined space entrance.

## **3.9 CRYSTALLINE SILICA**

Grinding, abrasive blasting, and foundry operations of construction materials containing crystalline silica, shall comply with USACE EM 385-1-1, Appendix C. The Contractor shall develop and implement effective exposure control and elimination procedures to include dust control systems, engineering controls, and establishment of work area boundaries, as well as medical surveillance, training, air monitoring, and personal protective equipment.

## **3.10 DEMOLITION**

### **3.10.1 Demolition Plan**

The Contractor shall submit a written demolition plan for all demolition work to be carried on the site. In addition, the demolition plan shall be signed by a Professional Registered Engineer and meet the requirements of the Corps of Engineers Safety and Health Manual, EM 385-1-1, section 23. The demolition plan shall be submitted to the

COR at least 1 week before the beginning of the work, including structural calculations for the demolition, if necessary. The demolition work shall not begin before the Contractor has received a written approval from the COR.

#### 3.12.1 Protection of Personnel

During the demolition work the Contractor shall continuously evaluate the condition of the structure being demolished and take immediate action to protect all personnel working in and around the demolition site. No area, section, or component of floors, roofs, walls, columns, pilasters, or other structural element will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workers remove debris or perform other work in the immediate area.

#### 3.10.1 Protection of Structures

Floors, roofs, walls, columns, pilasters, and other structural components that are designed and constructed to stand without lateral support or shoring, and are determined to be in stable condition, shall remain standing without additional bracing, shoring, or lateral support until demolished, unless directed otherwise by the COR. The Contractor shall ensure that no elements determined to be unstable are left unsupported and shall be responsible for placing and securing bracing, shoring, or lateral supports as may be required as a result of any cutting, removal, or demolition work performed under this contract.

Interior concrete or masonry walls shall be demolished from the top down unless a Registered Engineer can demonstrate that an alternate method poses no additional safety hazards.

### **3.11 HOUSEKEEPING**

#### 3.11.1 Clean-Up

The Contractor shall be responsible for cleaning up. The Contractor shall require his personnel to keep the immediate work site clean of all dirt and debris resulting from work under this contract. Accumulated dirt and debris shall be hauled off and disposed of in accordance with local law and at least once a week by the Contractor. Additionally, all debris in work areas shall be cleaned up daily or more frequently if necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

Stairwells used by the Contractor during execution of work shall be cleaned daily. Cloths, mops, and brushes containing combustible materials shall be disposed of or stored outside of the buildings in tight covered metal containers. Paints and thinners shall not be poured into inlets of the interior or exterior sewage system. Paint, stains, and other residues on adjacent surfaces or fixtures caused by the Contractor shall be carefully removed and cleaned to original finish. Upon completion of the work, the Contractor shall remove all construction equipment, materials and debris resulting from the work. The entire work site and the area used by Contractor personnel shall be left clean.

### **ATTACHMENT**

STR 015250 – SAFETY AND OCCUPATIONAL HEALTH PHASING PLAN

-End of Section –

#### A. PURPOSE AND RESPONSIBILITIES:

1. The purpose of this SOH Phasing Plan is to establish controls and procedures to reduce the safety and occupational health risks on associated projects to an acceptable level. This SOH Phasing Plan is not intended to address all program SOH requirements, but provides general emphasis to certain procedures and requirements addressed in: EM 385-1-1, U.S. Army Corps of Engineers Safety and Health Requirements Manual
2. For contractor safety on projects associated with this program, compliance with EM 385-1-1 safety requirements will be the long-term goal reached by growing a safety culture. This compliance will, by necessity, be achieved through a phased-in process. In the Commander's letter at the preface of the EM 385-1-1, he acknowledges that in OCONUS locations, strict compliance with the manual may not be possible – and through the hazard analysis process, safety measures can be developed to attain the same degree of safety.
  - a. The exact timeline and methods of compliance, based generally on the Phase plan below will be determined by in-theater Project Delivery Team (PDT) partners responsible for safety, to include USACE Field Engineering/Construction/ Safety personnel, Prime Contractors and Local Subcontractors. The Prime Contractor, in partnership with the USACE and subcontractors, will develop a Safety and occupational Health Plan (SOHP) consisting of a specific Accident Prevention Plan (APP) and Activity Hazard Analysis for each project.
  - b. Each project SOHP will evolve as a living document, starting by dividing into phases to provide a goal with a timeline. Focus for the project safety program areas will be based on the following time-based phases.

Phase I: "Saving Lives". Establish achievable compliance methods and basic worker safety education to eliminate or reduce to an acceptable level the life-threatening conditions associated with high hazard construction activities.

- The initial high-hazard focus areas shall include:

- o Excavations
- o Fall Hazards
- o Electrical Work
- o Mobile Construction Equipment
- o Machinery
- o Confined Spaces

- Develop a basic worker safety and health practices manual/ guide and associated mandatory training for each Focus area listed above. These will be in English and local language, based on local conditions and practices and targeted at high-hazard activities.

- On all contract sites, the basic life-support will include First Aid Kits, and emergency communication.

- Contractor Accident Prevention Plans, Activity Hazard Analyses, and other safety-related systems under development with assistance by PDT

Phase II: "Building A Safety Culture" (Approximately one year, beginning at end of Phase I) Advanced

safety education of local contractors and LN work force. Full contractor compliance with USACE safety standards related to high-hazard situations, increased application of standards on all work.

- Workforce education and training to include all applicable requirements of EM 385-1-1 and International Safety Standards
- All required Personal Protective Equipment (PPE) available and used by workers in applicable work practices, as outlined in the EM 385-1-1.
- Contractor Accident Prevention Plans, Activity Hazard Analyses, and other safety-related systems refined to meet standard USACE expectations with assistance by PDT
- Standard Contractor Safety administrative responsibilities required, i.e.: Accident reporting, man-hour tracking, training documentation, First Aid personnel certification, fire protection, etc.

Phase III, "Full Performance" (beginning at end of Phase II) Full performance in compliance with EM 385-1-1 and other applicable laws, regulations, design codes and standards. Where standard compliance is not possible, local methods may be used in accordance with implementing letter of EM 385-1-1 or through formal waiver process.

3. The PDT shall employ the "Plan, Do, Check, Act" process for implementing this SOHP as a living document. Each PDT member is responsible for planning for safety and health management within their area of responsibility, implementing agreed-on mitigation, checking to assure that the SOHP is being implemented and acting to adjust plans and implementation with a goal of continuous improvement. This plan will be reviewed and revised as needed at the initiation of each Phase listed above.
4. The PDT members shall cooperate in developing a listing of potential hazards associated with each project.

## **B. GOALS AND OBJECTIVES:**

1. Goals. The safety and health goals of all projects are:

- a. Be accident free
- b. Detect and address safety and health problems early in the life of each project
- c. Do not accept unnecessary risk
- d. Every team member, to include contractors shall contribute to the safety and health of their fellow team members and assure that the product is free of inherent hazards to the user.
- e. Educate the workforce and promote Safety as a new way of doing business, show how the project and the employee benefit from Safety.

2. Objectives. The safety and health objectives of this program are:

- a. Managers, supervisors, and workers shall be held accountable, based on the current Phase, for safety and health.
- b. Safety and health expectations shall be communicated with the work force in their native language through the use of banners, flyers, and periodic safety meetings
- c. The work force shall have the safety and health training needed to perform the work at hand, based on the Phase.

- d. Injury and property damage shall be avoided through early detection and management of hazards

#### Phase I Interim Safety and Occupational Health Work Practices for USACE Contractor Projects

##### Phase I Safety Program

1. Contractors shall strive to maintain full compliance with the USACE Safety Requirements Manual, EM 385-1-1. This may not be easily achieved during this Phase, due to a number of factors. The focus for safety and health efforts during this Phase is Saving Lives – the prevention of deaths, permanently disabling injuries, and major property loss. The goal during this period is to provide the equipment and methods needed to save lives and to train the workforce in working safely and using the correct personal Protective Equipment (PPE).
2. In order to assist in achieving this goal immediately, the following interim standards shall be used (as a minimum acceptable standard) when full compliance with the EM 385-1-1 is not possible. Contractors shall provide these standards in to their workforce in the local language and shall provide training as needed to ensure worker awareness.

#### Basic Safety and Health Standards for Construction

- A. USACE and the contractors must form a team to assure safety on every job site and prevent serious accidents. All unsafe conditions must be reported and the hazard reduced before work may proceed.
- B. Personal Protective Equipment (PPE) may not always be available to every worker during this Phase. Where the equipment required by the USACE Safety Manual, EM 385-1-1, cannot be provided in a timely manner, the contractor shall develop methods that will provide a similar degree of safety (as accepted by USACE) and not expose the workers to serious risk. The mandatory minimum standards for all PPE are:
  - Footwear: Closed-toe durable shoes or boots shall be worn by all workers on the project site. No sandals or sports shoes will be allowed, at no time will workers be allowed on the project site with bare feet. Safety footwear (steel-toe or other protection) should be worn by workers using steel rollers, tampers, jack hammers or carrying heavy objects (metal, concrete, stone)
  - Head Protection: When they are available, hard hats should be worn by all construction workers when they are at the project. Hard Hats must be worn in overhead hazard areas including material hoisting/ lifting operations, areas below scaffolds and other elevated work, in excavations, and low ceiling areas that have sharp or hazardous projections. If they are not available, then workers must be kept away from these and other overhead hazard areas.
  - Respirators: Workers exposed to toxic chemicals, vapors, gases and dusts must wear proper respiratory protection. Such exposure is expected in asbestos removal/ repair work, working with paints and solvents in rooms or enclosed spaces, and fuel production facilities. The employer must train the workers in the uses of the respirator and how to properly wear it. The minimum acceptable respirator is a negative pressure filter or cartridge half-face respirator that is correctly equipped for the hazard. Contractors shall consult and follow the ACGIH guidance for length of allowable exposure to the contaminant and workers shall not exceed the recommended time for exposure. Dust Masks will be worn when the work is producing visible dust.
  - Eye Protection: Workers shall wear protective glasses, goggles, or visors when exposed to eye hazards.

These hazards include concrete dust, stone and concrete chips from hammering, sandblasting, and power tool cutting or milling. Workers performing welding and cutting with torches or arc-welding equipment shall wear the proper shaded lenses in face shields and/ or goggles.

- Hearing Protection: Protective ear plugs shall be worn when workers are exposed to potentially damaging noise including jack hammers, flight line operations, power saws and grinders, and combustion engines without mufflers.
- Gloves: All workers shall have protective gloves appropriate to the task.
- Clothing: Workers shall wear clothing that protects their skin from damage – shirts and long pants at a minimum. Workers exposed to welding operations, chemicals, abrasive blasting, wet concrete, asbestos, and other hazardous contaminants will wear appropriate clothing for the hazard. Workers using power tools or operating equipment shall not wear very loose or flowing clothing that may get caught in the equipment.

C. Work Methods for Highly Hazardous Work: The following types of work and hazards are recognized as the leading cause of serious injuries and deaths in construction work. Each type of work has specific PPE and safety equipment that is required to do the work and also specific procedures that must be followed every time the work is done. These interim measures are the minimum acceptable precautions. For each project, an Activity Hazard Analysis (AHA) shall be completed and, when possible, compliance with more restrictive methods of the EM 385-1-1 shall be achieved.

Workers shall be trained on the following safety precautions, the nature of the hazards involved, and any additional work methods used before performing each type of work

- Excavations

- o The Site Safety and Health Officer will be contacted for inspection of the work prior to digging. The SSHO will assist in any safety equipment or techniques that are required to avoid injury. They will also provide a safety check on the location to assure there are no underground hazards at the site.
- o All excavations or unsafe areas will be marked with barricades or warning tape. These warnings must be maintained and visible until the area is restored to a safe condition.
- o When workers will enter trenches, the walls shall be sloped according to the type of soil or shoring, trench boxes, or other structures will be used to protect workers from collapsing walls
- o Soil removed from trenches will not be placed at the edge of the trench – it must be placed back at least 1 meter from the edge.
- o Vehicles and construction equipment must not be parked closer than 2 meters from the edge of an excavation.
- o Excavation walls shall be inspected regularly during each day to check for cracks, bulges, large stones, sandy areas, and failure of the wall. If these conditions are found, nobody may enter the excavation and the damaged area must be dug out or braced.

- Fall Hazards

- o When working above 2 meters from the ground or another level, all workers shall be protected from falling. The SSHO will inspect prior to beginning work to be sure the work methods are safe. Inspection will include work on ladders, scaffolds, and other elevated work areas.
- o Protection systems shall be sturdy railings, walls, or other structures

- o If there are no structures to protect workers, body belts or harnesses shall be used along with lanyards.
- o Body belts should be mainly be used only to prevent a worker from falling over an edge or off a structure.
- o Body belts and harnesses can both be used as fall protection (stopping a falling worker). The lanyard shall be rope strong enough to withstand the shock of stopping the worker's weight, and they shall be as short as possible, to limit the shock force. Lanyards shall never allow a worker to fall more than 2 meters. It is recommended that lanyards without shock absorber devices be no longer than 1 meter.

- Electrical Work

- o All circuits, wires, and electrical devices shall be tested with a volt meter and found to be de-energized before workers touch the energized parts
- o Controls, switches, and other means for energizing the circuit or equipment shall be tagged "do not operate"
- o Workers shall not work closer to energized systems than the distances listed in the USACE manual.
- o Temporary electrical systems shall be grounded and tested for good ground resistance before use.
- o Power tools shall be protected from water and damage, and their cords must be insulated. Cords must be factory installed or equivalent replacements, including safety grip plug and cord boot.
- o Extension cords will be in safe, good working order.

- Mobile Construction Equipment

- o If equipment, particularly cranes, are damaged the repairs shall be done by a competent repair person and verified by the SSHO prior to being brought back into service.
- o Nobody may ride outside the cab of construction equipment. Specifically, no riders may ever be in loader buckets, bulldozer blades, on forklift forks, or suspended by a crane.
- o When workers are nearby, construction equipment must have reverse signal alarms or shall use a spotter standing away from the equipment. The spotter must be visible by the driver and positioned to see the area behind the equipment.
- o Construction equipment must work a safe distance from electrical systems, based on the voltage.
- o Cranes must be used according to the manufacturer. If no manufacturer data is available, a load chart shall be developed by a qualified engineer.
- o Workers should stay out of the radius of the crane boom during a lift.
- o Lifting ropes shall be inspected daily for breaks and failure of hardware and fittings.
- o Nobody shall ever ride the hook or load of a crane.

- Machinery

- o Rotating shafts, wheels, blades, and other hazardous parts shall have guards to prevent workers from being injured.
- o Fuel-powered machinery must not be operated indoors or near enclosed areas without using powered ventilation to prevent toxic CO build-up.
- o Metal housings of electrically powered equipment must be grounded

- Confined Spaces

- o The SSHO will pre-approve any work in a confined space, such as in a tank, sewer, manhole or any other enclosed area. The SSHO will inspect the work and assist with any safety equipment or techniques that are required.
- o All permit-required confined spaces (PRCS) on a project shall have signs prohibiting entry.



- o Entrants, supervisors, and attendants for PRCS shall be properly trained.
  - o When available, oxygen/flammable/toxic gas meters shall be used for all PRCS. This equipment must be used to evaluate the air in all spaces known or suspected to have contained flammable or toxic chemicals or contain sewage, rotting vegetation or other organic matter.
  - o For spaces not meeting the above criteria, mechanical ventilation fans shall be used to clear the air in the space when meters are not available. Based on the air flow of the fan, it shall exhaust the total volume of the space a minimum of seven times prior to entry.
  - o All entrants shall wear a harness, body belt, or other device attached to a rope sufficient to retrieve the worker in an emergency.
  - o Permits should be used during PRCS entry. If not possible, then some visible means, such as flags or tags outside the entrance, shall be used so supervisors can see when workers are in the space.
- Gas Cylinders
    - o Pressurized gas cylinders, such as Oxygen and Acetylene tanks will be stored in a holding stand/cart to prevent them from falling over. Cylinders will not be placed free on the ground or standing free. If the bottle is not in use the valve will be removed.

D. Child Labor. Minors under the age of 18 may not perform any of the above hazardous work. Additionally, these minors can not perform any hazardous work such as operating dangerous power tools (circular saws, jack hammers, lathes, etc), driving vehicles, be exterior assistants for vehicle operators or operating mobile construction equipment, explosives work, work at heights over 2 meters without standard railings, electrical work, entering excavations, and work with toxic substances.

## SECTION 01780

## **SECTION 01780**

### **CLOSEOUT SUBMITTALS**

#### **PART 1 GENERAL**

##### **1.1 SUBMITTALS**

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01335 SUBMITTAL PROCEDURES:

#### **SD-02 Shop Drawings**

##### **As-Built Drawings**

Drawings showing final as-built conditions of the project. The final CADD as-built drawings shall consist of one set of electronic CADD drawing files in the specified format, one set of mylar drawings, 2 sets of blue-line prints of the mylars, and one set of the approved working as-built drawings.

## SD-03 Product Data

### As-Built Record of Equipment and Materials

Two copies of the record listing the as-built materials and equipment incorporated into the construction of the project.

### Warranty Management Plan

One set of the warranty management plan containing information relevant to the warranty of materials and equipment incorporated into the construction project, including the starting date of warranty of construction. The Contractor shall furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.

### Warranty Tags

Two record copies of the warranty tags showing the layout and design

### Final Cleaning

Two copies of the listing of completed final clean-up items

## **1.2 PROJECT RECORD DOCUMENTS**

### 1.2.1 As-Built Drawings

This paragraph covers as-built drawings complete, as a requirement of the contract. The terms "drawings," "contract drawings," "drawing files," "working as-built drawings" and "final as-built drawings" refer to contract drawings which are revised to be used for final as-built drawings.

#### 1.2.1.1 Government Furnished Materials

One set of electronic CADD files in the specified software and format revised to reflect all bid amendments will be provided by the Government at the preconstruction conference for projects requiring CADD file as-built drawings.

#### 1.2.1.2 Working As-Built and Final As-Built Drawings

The Contractor shall revise 2 sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. These working as-built marked drawings shall be kept current on a weekly basis and at least one set shall be available on the jobsite at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. Final as-built drawings shall be prepared after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The working as-built marked prints and final as-built drawings will be jointly reviewed for accuracy and completeness

by the Contracting Officer and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final as-built drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the as-built drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. The working and final as-built drawings shall show, but shall not be limited to, the following information:

- a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Valves, splice boxes and similar appurtenances shall be located by dimensioning along the utility run from a reference point. The average depth below the surface of each run shall also be recorded.
- b. The location and dimensions of any changes within the building structure.
- c. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.
- d. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.
- e. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.
- f. Changes or modifications which result from the final inspection.
- g. Where contract drawings or specifications present options, only the option selected for construction shall be shown on the final as-built prints.
- h. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, the Contractor shall furnish a contour map of the final borrow pit/spoil area elevations.
- i. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.
- j. Modifications (change order price shall include the Contractor's cost to change working and final as-built drawings to reflect modifications) and compliance with the following procedures.
  - (1) Directions in the modification for posting descriptive changes shall be followed.
  - (2) A Modification Circle shall be placed at the location of each deletion.
  - (3) For new details or sections which are added to a drawing, a Modification Circle shall be

placed by the detail or section title.

- (4) For minor changes, a Modification Circle shall be placed by the area changed on the drawing (each location).
- (5) For major changes to a drawing, a Modification Circle shall be placed by the title of the affected plan, section, or detail at each location.
- (6) For changes to schedules or drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.
- (7) The Modification Circle size shall be 12.7 mm 1/2 inch diameter unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

#### 1.2.1.3 Drawing Preparation

The as-built drawings shall be modified as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, and adding such additional drawings as may be necessary. These working as-built marked prints shall be neat, legible and accurate. These drawings are part of the permanent records of this project and shall be returned to the Contracting Officer after approval by the Government. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

#### 1.2.1.4 Computer Aided Design and Drafting (CADD) Drawings

Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings shall be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols shall be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same graphic standards specified for original drawings. The title block and drawing border to be used for any new final as-built drawings shall be identical to that used on the contract drawings. Additions and corrections to the contract drawings shall be accomplished using CADD files. The Contractor will be furnished "as-designed" drawings in AutoCad Release 2000 or Microstation V8 format compatible with a Window 2000 or Windows XP operating system. The electronic files will be supplied on compact disc, read-only memory (CD-ROM). The Contractor shall be responsible for providing all program files and hardware necessary to prepare final as-built drawings. The Contracting Officer will review final as-built drawings for accuracy and the Contractor shall make required corrections, changes, additions, and deletions.

- a. CADD colors shall be the "base" colors of red, green, and blue. Color code for changes shall be as follows:
  - (1) Deletions (red) - Deleted graphic items (lines) shall be colored red with red lettering in notes and leaders.
  - (2) Additions (Green) - Added items shall be drawn in green with green lettering in notes

and leaders.

(3) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes shall be in blue.

- b. The Contract Drawing files shall be renamed in a manner related to the contract number (i.e., 98-C-10.DGN) as instructed in the Pre-Construction conference. Marked-up changes shall be made only to those renamed files. All changes shall be made on the layer/level as the original item. There shall be no deletions of existing lines; existing lines shall be over struck in red. Additions shall be in green with line weights the same as the drawing. Special notes shall be in blue on layer#63.
- c. When final revisions have been completed, the cover sheet drawing shall show the wording "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in letters at least 5 mm 3/16 inch high. All other contract drawings shall be marked either "AS-Built" drawing denoting no revisions on the sheet or "Revised As-Built" denoting one or more revisions. Original contract drawings shall be dated in the revision block.
- d. Within 20 days for contracts \$5 million and above after Government approval of all of the working as-built drawings for a phase of work, the Contractor shall prepare the final CADD as-built drawings for that phase of work and submit two sets of blue-lined prints of these drawings for Government review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within 10 days for contracts \$5 million and above the Contractor shall revise the CADD files accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within 20 days for contracts \$5 million and above of substantial completion of all phases of work, the Contractor shall submit the final as-built drawing package for the entire project. The submittal shall consist of one set of electronic files on compact disc, read-only memory (CD-ROM), one set of mylars, two sets of blue-line prints and one set of the approved working as-built drawings. They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CADD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final as-built drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

#### 1.2.1.5 Payment

No separate payment will be made for as-built drawings required under this contract, and all costs accrued in connection with such drawings shall be considered a subsidiary obligation of the Contractor.

#### 1.2.2 As-Built Record of Equipment and Materials

The Contractor shall furnish one copy of preliminary record of equipment and materials used on the

project 15 days prior to final inspection. This preliminary submittal will be reviewed and returned 2 days after final inspection with Government comments. Two sets of final record of equipment and materials shall be submitted 10 days after final inspection. The designations shall be keyed to the related area depicted on the contract drawings. The record shall list the following data:

#### RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA

Description	Specification Section	Manufacturer and Catalog, Model, and Serial Number	Composition and Size Used	Where
-------------	--------------------------	---	------------------------------	-------

##### 1.2.3 Final Approved Shop Drawings

The Contractor shall furnish final approved project shop drawings 30 days after transfer of the completed facility.

##### 1.2.4 Construction Contract Specifications

The Contractor shall furnish final as-built construction contract specifications, including modifications thereto, 30 days after transfer of the completed facility.

##### 1.2.5 Real Property Equipment

The Contractor shall furnish a list of installed equipment furnished under this contract. The list shall include all information usually listed on manufacturer's name plate. The "EQUIPMENT-IN-PLACE LIST" shall include, as applicable, the following for each piece of equipment installed: description of item, location (by room number), model number, serial number, capacity, name and address of manufacturer, name and address of equipment supplier, condition, spare parts list, manufacturer's catalog, and warranty. A draft list shall be furnished at time of transfer. The final list shall be furnished 30 days after transfer of the completed facility.

#### 1.3 WARRANTY MANAGEMENT

##### 1.3.1 Warranty Management Plan

The Contractor shall develop a warranty management plan which shall contain information relevant to the clause Warranty of Construction. At least 30 days before the planned pre-warranty conference, the Contractor shall submit the warranty management plan for Government approval. The warranty management plan shall include all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan shall be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below shall include due date and whether item has been submitted or was accomplished. Warranty information made available during the construction phase shall be submitted to the Contracting Officer for approval prior to each monthly pay estimate. Approved information shall be assembled in a binder and shall be turned over to the Government upon acceptance of the work. The construction warranty period shall begin on the date of project acceptance and shall continue for the full product warranty period. A joint 4

month and 9 month warranty inspection shall be conducted, measured from time of acceptance, by the Contractor, Contracting Officer and the Customer Representative. Information contained in the warranty management plan shall include, but shall not be limited to, the following:

- a. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, sub-Contractors, manufacturers or suppliers involved.
- b. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.
- c. A list for each warranted equipment, item, feature of construction or system indicating:
  1. Name of item.
  2. Model and serial numbers.
  3. Location where installed.
  4. Name and phone numbers of manufacturers or suppliers.
  5. Names, addresses and telephone numbers of sources of spare parts.
  6. Warranties and terms of warranty. This shall include one-year overall warranty of construction. Items which have extended warranties shall be indicated with separate warranty expiration dates.
  7. Cross-reference to warranty certificates as applicable.
  8. Starting point and duration of warranty period.
  9. Summary of maintenance procedures required to continue the warranty in force.
  10. Cross-reference to specific pertinent Operation and Maintenance manuals.
  11. Organization, names and phone numbers of persons to call for warranty service.
  12. Typical response time and repair time expected for various warranted equipment.
- d. The Contractor's plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.
- e. Procedure and status of tagging of all equipment covered by extended warranties.
- f. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

#### 1.3.2 Pre-Warranty Conference

Prior to contract completion, and at a time designated by the Contracting Officer, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty shall be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor shall furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warranted construction, shall be continuously available, and shall be

responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

### 1.3.3 Contractor's Response to Construction Warranty Service Requirements

Following oral or written notification by the Contracting Officer, the Contractor shall respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. The Contractor shall submit a report on any warranty item that has been repaired during the warranty period. The report shall include the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframes specified, the Government will perform the work and back charge the construction warranty payment item established.

- a. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.
- b. Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.
- c. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.
- d. The "Construction Warranty Service Priority List" is as follows:

#### Code 1-Air Conditioning Systems

- 1) Recreational support.
- 2) Air conditioning leak in part of building, if causing damage.
- 3) Air conditioning system not cooling properly.

#### Code 1-Doors

- 1) Overhead doors not operational, causing a security, fire, or safety problem.
- 2) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

#### Code 3-Doors

- 1) Overhead doors not operational.
- 2) Interior/exterior personnel doors or hardware not functioning properly.

#### Code 1-Electrical

- 1) Power failure (entire area or any building operational after 1600 hours).
- 2) Security lights
- 3) Smoke detectors

#### Code 2-Electrical

- 1) Power failure (no power to a room or part of building).
- 2) Receptacle and lights (in a room or part of building).



Code 3- Electrical

Street lights

Code 1-Gas

- 1) Leaks and breaks.
- 2) No gas to family housing unit or cantonment area.

Code 1-Heat

- 1) Area power failure affecting heat.
- 2) Heater in unit not working.

Code 2-Kitchen Equipment

- 1) Dishwasher not operating properly.
- 2) All other equipment hampering preparation of a meal.

Code 1-Plumbing

- 1) Hot water heater failure.
- 2) Leaking water supply pipes.

Code 2-Plumbing

- 1) Flush valves not operating properly.
- 2) Fixture drain, supply line to commode, or any water pipe leaking.
- 3) Commode leaking at base.

Code 3 –Plumbing

Leaky faucets.

Code 3-Interior

- 1) Floors damaged.
- 2) Paint chipping or peeling.
- 3) Casework.

Code 1-Roof Leaks

Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks

Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 2-Water (Exterior)

No water to facility.

Code 2-Water (Hot)

No hot water in portion of building listed.

Code 3-All other work not listed above.

### 1.3.5 Warranty Tags

At the time of installation, each warranted item shall be tagged with a durable, oil and water resistant tag approved by the Contracting Officer. Each tag shall be attached with a copper wire and shall be sprayed with a silicone waterproof coating. The date of acceptance and the QC signature shall remain blank until project is accepted for beneficial occupancy. The tag shall show the following information.

- a. Type of product/material\_\_\_\_\_.
- b. Model number\_\_\_\_\_.
- c. Serial number\_\_\_\_\_.
- d. Contract number\_\_\_\_\_.
- e. Warranty period\_\_\_\_\_ from\_\_\_\_\_ to\_\_\_\_\_.
- f. Inspector's signature\_\_\_\_\_.
- g. Construction Contractor\_\_\_\_\_.
- Address\_\_\_\_\_.
- Telephone number\_\_\_\_\_.
- h. Warranty contact\_\_\_\_\_.
- Address\_\_\_\_\_.
- Telephone number\_\_\_\_\_.
- i. Warranty response time priority code\_\_\_\_\_.
- j. WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.

### 1.4 MECHANICAL TESTING, ADJUSTING, BALANCING, AND COMMISSIONING

Prior to final inspection and transfer of the completed facility; all reports, statements, certificates, and completed checklists for testing, adjusting, balancing, and commissioning of mechanical systems shall be submitted to and approved by the Contracting Officer as specified in applicable technical specification sections.

### 1.5 OPERATION AND MAINTENANCE MANUALS

Operation manuals and maintenance manuals shall be submitted as specified. Operation manuals and maintenance manuals provided in a common volume shall be clearly differentiated and shall be separately indexed.

### 1.5 FINAL CLEANING

The premises shall be left broom clean. Stains, foreign substances, and temporary labels shall be removed from surfaces. Carpet and soft surfaces shall be vacuumed. Equipment and fixtures shall be

cleaned to a sanitary condition. Filters of operating equipment shall be replaced. Debris shall be removed from roofs, drainage systems, gutters, and downspouts. Paved areas shall be swept and landscaped areas shall be raked clean. The site shall have waste, surplus materials, and rubbish removed. The project area shall have temporary structures, barricades, project signs, and construction facilities removed. A list of completed clean-up items shall be submitted on the day of final inspection.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

-- End of Section 01780 -

---

SAMPLE TASK ORDER

Solicitation no. W5J9JE-09-R-0007



**US Army Corps  
of Engineers  
Afghanistan Engineer District**

---

# **ANA SECURITY UPGRADES TO GARDEZ**

**Paktya, Afghanistan**

**Design/Build  
Project Specifications  
And Drawings**

**Proposal Requirements, Contract Forms, Conditions of the Contract**

**September 2009**

---

**THIS IS A SINGLE-PHASE REQUEST FOR PROPOSAL**

## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>
00010	Proposal Form
00150	The Design-Build Process
00555	Design Concept Documents
01010	Scope of Work
01015	Technical Requirements
01060	Special Clauses
01312	Quality Control System (QCS)
01321	Project Schedule
01335	Submittal Procedures for Design/Build Projects
01415	Metric Measurements
01451	Contractor Quality Control
01525	Safety & Occupational Health Requirements
01770	Closeout Procedures
01780	Closeout Submittals
01781	Operation and Maintenance Data

Appendix A - Project Overview

Appendix B - Project Location

Appendix C - Front ECP Improvements

Appendix D - Reinforced Concrete Stucco & Stone Veneer Wall

Appendix E - New Guard Tower Concept Drawing

Appendix E1 - New Guard Tower Top View

Appendix E2 - New Guard Tower Window Detail

Appendix F - Gate House

Appendix G – Cable Lift Gate

Appendix H – K4 Sliding Gate

Appendix I – Drop Arm Barrier

## **SECTION 00150**

### **THE DESIGN/BUILD PROCESS**

#### **PART 1 - GENERAL**

##### **1. DESIGN/BUILD (DB) PROCESS**

The facility shall be designed and built by a single DB contractor. The DB contractor may be a single firm or a team of firms that includes registered Architects and Engineers either employed by or subcontracted to the DB contractor. Licensing jurisdiction of Architects and Engineers of record shall be verifiable. The DB contractor shall be the Architect/Engineer-of-Record, whether the DB contractor utilizes services of licensed architects and engineers employed by its firm or subcontracts with independent architectural and/or engineering firm(s). The DB contractor shall be solely liable for design errors and/or omissions and should be insured as the A-E firm against design errors and omissions.

Section 00555, DESIGN CONCEPT DOCUMENTS identifies project documents furnished herewith to be used as the basis for the project design and construction documents. The successful Offeror shall be required to complete the design and construction documentation, and construct the project in compliance with these completed requirements.

##### **2. OUTLINE DESCRIPTION OF THE DB PHASE**

No work can begin on any phase of the process until an authorization Clearance for construction for that phase is issued.

###### **2.1 PROPOSAL PHASE**

The Proposal Phase includes the period from the time from the issuance of the Request for Proposals (RFP) through the selection process and the final award of the DB contract.

The proposals to be submitted include a Management/Technical Proposal and a Cost/Price Proposal. The contents and organization of the proposal is described in SECTION 00110 - PROPOSAL PREPARATION. The Government will evaluate and award the DB contract to a single Offeror based upon the criteria which are outlined in SECTION 00120 - PROPOSAL EVALUATION AND CONTRACT AWARD.

###### **2.2 DESIGN PHASE**

The successful DB contractor shall develop and submit for formal review three submittals and the final design. The DB contractor is encouraged to develop and submit multiple cost saving proposals for innovative design alternatives.

###### **2.2.1 The Design Phase will consist of three parts as follows:**

- a. Part 1 will be the basic services required to develop the first submittal which represents: 100% complete drawings and specifications for site preparation work, utility construction, paving, foundation, and structural diaphragm of all work and approximately 35% complete drawings and specifications of

all other required construction documents. Part I also includes incorporating the revisions identified in the First submittal review.

After approval of the Part 1 drawings and specification submittal, the Government may issue a Clearance for Construction letter to commence with the Build Phase for all site and off-site utilities, clearing, grubbing, rough grading the site, demolition work, parking lot base course, foundation, and structural framing.

A Pre-design meeting will be conducted to distribute as-built drawings to the DB contractor, finalize and clarify technical information, and clarify other necessary information.

b. Part 2 shall include all design services required to complete the second design submittal: 100% complete drawings and specifications for site preparation work, utility construction, paving, foundation, and structural diaphragm of all work and approximately 65% complete drawings and specifications of all other required construction documents. Part 2 design shall not begin until an approval of the Part 1 submittal is issued.

c. Part 3 shall include all design services required to complete the third design submittal (100%). Part 3 design shall not begin until an approval of the Part 2 submittal is issued.

### 3. BUILD PHASE

The Build Phase will be initiated by an authorization letter.

The authorization letter will be provided separately by the Contracting Officer for each phase of the work. The Government may give the DB Contractor authorization for the Build Phase for portions of the work following review and approval of the First Design Submittal.

Weekly coordination meetings will be held at which, as a minimum, the DB Contractor's Project Manager, a representative of the Designer, the site Superintendent, and the Contractor's Quality Control Manager shall be present.

### 4. PROJECT SCHEDULE:

The following is an internal design schedule and is subject to modification by the Offeror to suit their particular method of operation. Overall time constraints are required and cannot be changed except by contract modification. Prospective offerors shall be required to submit a complete schedule for design and construction that meets or exceeds the overall time goals of the Government for this project.

Notice to Proceed	following Award of Contract (upon written notification)
Design Phase - Basic Services Pre-design Meeting	within 7 days from Award of Contract
Design Submittal Due	within 30 days following Award of Contract
Submittal Review Conference ( <i>location TBD</i> )	within 7 days following submittal review
Incorporate Changes to Submittal (Re-Submit for Review and Approval 100% design submittal)	within 7 days following review conference



Build Phase Authorization for Remainder  
of Work

Upon approval of design submittal

Total Design and Construction Period

**300** days (performance period  
includes design and construction phases)

4. LIQUIDATED DAMAGES:

Liquidated damages in the amount of **\$727** every calendar day of delay shall be assessed and charged to the Contractor.

***All days are in calendar days.***

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

--END OF SECTION--

## **SECTION 00555**

### **DESIGN CONCEPT DOCUMENTS**

#### **GENERAL**

#### **GENREAL**

This section identifies documents issued with this RFP which establish the concept or basis for the project design. These requirements are minimum standards and may be exceeded by the Offeror. Deviations from these concepts and standards may be approved if considered by the Government to be in its best interests.

The extent of development of these requirements in no way relieves the successful Offeror from the responsibility of completing the design, construction documentation, and construction of the facility in conformance with applicable criteria and codes.

#### **ENGINEERING AND DESIGN CRITERIA**

General design requirements are set forth in this RFP herein. The Specifications Divisions 02 thru 16 is the primary specifications criteria for the design and construction of the project. No design criteria will be furnished by the Afghanistan Engineer District except that which may be required for design and is not available from commercial sources or from the Construction Criteria Base (CCB) or 'Techinfo' website located at <http://www.wbdg.org/ccb/>. The references within CCB must be obtained by the A/E if the criteria are required or desired. All design, unless otherwise specified, shall be based on nationally recognized industry standard, criteria, and practice.

## **APPENDIX DOCUMENTS**

See Appendices for further technical requirements, criteria, and parameters that are a part of this contract.

## **SPECIFICATIONS**

Specifications included herein shall be utilized as design criteria and minimum standards for the corresponding construction work. The successful Offeror shall develop complete construction specifications using the criteria included in these specifications.

The Government will provide Division 1 specifications sections as required, to the successful Offeror; and these sections shall be included in the final construction specifications without change. The Design Build Contractor shall furnish these specifications on electronic media for the production of construction specifications when requested. These specifications shall be submitted together with other required contractor prepared project construction documents during the General Design Review (65%) of the Design Phase in accordance with Section 01135 SUBMITTAL REQUIREMENTS.

## **ORDER OF PRECEDENCE**

In case of conflict, duplication, or overlap of design criteria specified in the documents referenced in this section, the following order of precedence shall be followed:

1. Contract Award Document and referenced publications therein.
2. Written requirements supersede drawings.

## **MANDATORY CRITERIA**

Portions of the design criteria documents provide mandatory criteria. Mandatory criteria consists of drawings, schematics, specifications, and other requirements which shall not be altered or modified for proposal submittal or subsequent final design except for minor adjustments for coordination or except for cost reduction proposals as specified in Section 00150 - THE DESIGN BUILD PROCESS. Non-mandatory criteria shall be considered minimum requirements and may be enhanced, improved, or substituted to better suit design requirements or to improve evaluation consideration. Mandatory requirements are as listed below. All other design criteria shall be considered non-mandatory.

Work Plan

Boundary survey plan

Topographic survey plan

Any mandatory criteria referenced within Project Program.

Any other criteria listed herein which is listed, shown or implied as mandatory.

## **ADDITIONAL DOCUMENTS/CRITERIA FURNISHED BY THE GOVERNMENT**

The following documents will be furnished to the Design/Build Contractor when requested by the Offeror or Contractor:

Design Criteria published by the Government such as Technical Manuals (TM), Engineer Manuals (EM), Engineer Technical Letters (ETL) and other documents related to the design referenced herein which are not available on the Internet, including the CCB website.

Commercial design criteria and specifications will not be furnished by the Government.

Conversion of electronic media to other formats shall be the responsibility of the Design Build Contractor.

## **-- END OF SECTION --**

### **SECTION 01010**

#### **SCOPE OF WORK**

##### **1. GENERAL**

The project consists of the design and construction of security upgrades at Camp Thunder, Gardez City, Paktya Province. Refer to appendices for approximate site location. The project is defined as the design, material, labor and equipment to demolish existing fence and hesco wall and construct new perimeter wall, mounted and dismounted fighting positions, renovate guard towers, improve interior road drainage and repair interior perimeter patrol road. The work within this contract shall meet and be constructed in accordance with current U.S. design and International Building Codes (IBC), Life Safety Codes (NFPA-101), Force Protection and security standards. A partial listing of references is included herein:

IBC, International Building Codes 2003  
NFPA 101, Life Safety Codes  
UFC 4-010-01, DoD Minimum Anti-Terrorism Standards for Buildings.

##### **1.1 ENGLISH LANGUAGE REQUIREMENT**

All information shall be presented in English. The Contractor shall have a minimum of one English-speaking representative to communicate with the COR at all times when work is in progress.

##### **1.2 SUBMITTALS**

Submittals and a Submittal Register are required as specified in Section 01335 of the Basic Contract.

##### **1.3 CQM TRAINING REQUIREMENT**

Before project design and construction begin, the Contractor's Quality Control Manager is required to have completed the U.S. Army Corps of Engineers CQM course, or equivalent. Courses are offered at regular intervals. For enrollment and course information, contact Reed B. Freeman at the following:

Reed B. Freeman, PhD, PE  
Quality Assurance Branch  
Afghanistan Engineer District, USACE  
Email: reed.b.freeman@usace.army.mil  
Telephone: 079-760-4396

A copy of the course completion certificate shall be included in the Design Analysis submittal.

USACE Guide Specification 01451, entitled "Contractor Quality Control", 3.5.D. requires approval of the Contractor's CQC Plan. That approval is contingent upon the successful completion of this course by the Contractor's Quality Control Manager.

##### **2. LOCATION**

The site is located at the ANA Camp Thunder, in the city of Gardez, in Paktya Province, Afghanistan.

Latitude – (approx.) 33.60 deg. North  
Longitude – (approx.) 69.22 deg. East

### **3. DE-MINING ACTIVITIES**

The contractor is responsible for identification and clearing of UXO/land mines. The contractor shall search for, identify and clear all mines and unexploded ordnance (UXO) from the entire site. The contractor may only provide clearance/removal services via UN Mine Action Center for Afghanistan (UNMACA) accredited entities, and clearance shall be accomplished to the anticipated foundation depth as indicated in the contract. If sub-surface construction activities will be performed on this site the minimum clearance depth will be to 1 meter.

Clearance/removal may only be undertaken in accordance with International Mine Action Standards (IMAS) and the Afghanistan Mine Action Standards (AMAS). When mines and/or UXO's are identified, the Contractor shall place them in a location in accordance with IMAS/AMAS. The work shall proceed in phases, concurrently with other construction efforts as determined by the contractor. Construction will not commence in any area that has not been cleared to the specified depth. The contractor shall provide the Government a clearance certificate approved by the UNMACA indicating that the site is clear of mines and UXO's and is available for construction operations to proceed. It is the responsibility of the Contractor to be aware of the risk of encountering UXO/mines and to take all actions necessary to assure a safe work area to perform the requirements of this contract. The Contractor assumes the risk of any and all personal injury, property damage or other liability arising out of or resulting from any Contractor action taken hereunder. The Contractor and its subcontractors may not handle, work with, move, transport, render safe, or disarm any UXO/mine, unless they have appropriate accreditations under the IMAS/AMAS from the UNMACA. The contractor will furnish the US Army Corps of Engineers Demining Safety a copy of their intended demining/demolition plan for a safety review prior to commencement of demining activities on all sites.

If a UXO/mine is encountered after a UNMACA-approved clearance certificate is provided to the Government, UXO/mine disposal shall be handled in accordance with Section 01015, Technical Requirements.

## **4.0 SUMMARY OF WORK**

### **4.1 CONTRACTOR REQUIREMENTS**

The contractor shall design and construct the facilities as a design-build contract and shall be in accordance with the requirements stated in Section 01015: TECHNICAL REQUIREMENTS. In addition, all construction shall be in accordance with Joint Security Directorate Antiterrorism/Force Protection Guide, March 2002 and abide by the requirements of UFC 4-010-01, Design: Minimum DoD Antiterrorism Standards for Buildings, 8 Oct 2003 and UFC 4-010-02, DoD Minimum Antiterrorism Standoff Distances for Buildings, 8 Oct 2003 and Joint Security Directorate Antiterrorism/Force Protection Guide, March 2002. Refer to attachment following this section for more specifics. The design and construction work shall include but not be limited the following subparagraphs.

#### **4.1.1 GENERAL REQUIREMENTS FOR FACILITIES**

All requirements set forth in the Scope of Work and the Appendices but not included in the Technical Requirements, shall be considered as set forth in all, and vice versa. Provide ceiling fan and unit heaters for the guard towers.

All standard construction amenities and details such as heating, lighting, site drainage, utility connections, etc. shall be implied as a design and construction requirement. Drawings referenced are contained in Section 01015 or the Appendices.

- 1) The Contractor shall provide all labor, tools, materials, equipment, transportation And supervision to construct, furnish and install all items according to this SOW.

In general, this project consists of designing and constructing of the following as outlined in subsequent paragraphs: **(All dimensions and measures are approximate; contractor shall field verify.)**

#### 4.1.2 BASE BID

In general, this project consists of designing and constructing the facilities and features listed in the table below:

Work Item	Description
4.2 Perimeter Wall	Construct approximately 2758LM of RCC wall with Native Stone Masonry Veneer and Y-channel concertina razor wire, Demo 2758LM of existing barbed wire fence and 700LM of existing hesco barriers.
4.3 Guard Towers	Renovate 14 guard towers. Install ceiling fans and unit heaters in each; demo existing stairs and install stairs with landings at each.
4.4 Repair Interior Perimeter Road	Pave 5km of existing interior perimeter road with Asphaltic Macadam. Grade road to allow for proper drainage and vehicle exit onto mounted fighting positions.
4.5 Perimeter Wall Fighting Positions	Construct 11 perimeter fighting positions

## 4.2 PERIMETER WALL

Contractor shall repair or demolish existing perimeter barbed wire fence and hesco barriers and construct a new CMU wall perimeter. Perimeter wall improvements will be phased in sections not to exceed 450 linear meters. Existing fencing shall be used to secure the perimeter during construction. See Appendix A for the location of the new perimeter wall.

### 4.2.1 Demolish Existing Fence

The contractor shall use the existing fence to secure the perimeter during construction of the new perimeter wall. Demolition of existing fence shall be in sections lengths corresponding to new perimeter wall construction and not to exceed 450 linear meters.

#### 4.2.1.1 Demolish Existing Hesco Structures

Contractor shall demolish existing Hesco structures along the existing perimeter fence and properly dispose of material. Contractor will verify with COR before any and all demolition.

### 4.2.3 New Stone Wall

The site perimeter will require approximately 2,758 linear meters of CMU wall. The contractor is responsible for verifying distance. The Contractor shall construct reinforced CMU walls as shown on the Drawings and as specified in this statement of work. The walls shall include the force protection elements shown to include, but not limited to the barbed wire, concertino wire, supports, and concrete cap. The location(s), length and height of walls shall be as shown on the drawings. Reinforcing and construction block pattern shall be as shown. Grades and slopes relative to the wall shall be as shown or specified. See Attached 3000mm CMU Wall Binder.

## 4.3 GUARD TOWERS

Fourteen (14) guard towers shall be renovated where indicated in Appendix A. The Contractor shall construct new, upgrade and modify existing items in the guard towers as noted on the drawings and described herein. Guard towers may be one or 2 story structures with metal or concrete stairs. The stairs are to be removed and replaced per the drawings and specifications. Minor electrical upgrades are to be performed in designated guard towers. Unit heaters and ceiling fans are to be installed and connected to the existing electrical power system. See Appendix A and Guard Tower Binder.

## 4.4 REPAIR INTERIOR PERIMETER ROAD

The Contractor shall design and pave the interior perimeter road. The Contractor shall construct the entire road and parking network as shown on the Drawings. The road system shall include subgrade, base course, aggregate surface course and hot mix asphalt as indicated. Contractor shall perform all work necessary to install the entire road system in a manner indicated in the specifications. The road system shall, where indicated, include storm water management structures and features as required to ensure that no flooding occurs during a 10-year event. Drainage structures shall be constructed so that water in unlined trenches does not reach heights which will erode or weaken the road structure. See Appendix B and Roads Binder.

#### **4.5 PERIMETER WALL FIGHTING POSITIONS**

Construct eleven (11) perimeter wall fighting positions, as described in the attached fighting position binder and in the locations shown on the drawing and as designated by the COR. The Contractor shall construct dismantled fighting positions (DFPs) and mounted fighting positions (MFPs) as shown on the Drawings and as specified in this statement of work. The DFP/MFPs shall include the force protection elements shown to include, but not limited to the barbed wire, concertino wire, supports, and concrete cap. The fighting position behind the wall shall consist of HESCO Barriers and shooter platform with steps. The style, number, and location of the fighting positions shall be per the drawings. The wall height and actual length and height of the shooting platform and vehicle ramp may be adjusted to meet specific requirements of the site. Grades and slopes relative to the wall shall be as shown or specified. See Fighting Position Binder for technical requirements.

### **5.0 WORK DESCRIPTION**

#### **5.1 SITE PLANNING**

The Contractor shall prepare a site Boundary Survey and Site Plans based on information contained in the Request for Proposal. Concept drawings provided are by definition, only conceptual in nature, the Contractor must verify the space requirements and code compliance in accordance of section 1010 and section 1015 of this contract.

#### **5.2 DEMOLITION AND GRADING**

The contractor shall demolish selected existing structures at the site upon direction of the COR. The Contractor shall remove and dispose of all debris, concrete, and foundations. The Contractor shall verify the location of debris disposal with the Contracting Officer. The Contractor shall perform complete final site grading after installation of all required drainage structures per the Drainage Plan that shall be prepared as part of this project and after installation of any other buried utilities or other project components.

Scrap metal shall be the property of the Host Government. The scrap metal on site shall be moved to an area away from the site perimeter as directed by the Contracting Officer's Representative and left for the Host Government to remove and/or salvage. This includes demolished fencing: posts shall be removed without damage and stacked, Y-shaped outriggers shall receive similar treatment, fence fabric shall be rolled into bundles and stacked, and concertina wire shall be recoiled and stacked.

#### **6.0 COMPLETION OF WORK**

All work under this contract shall be completed and buildings ready for beneficial occupancy 300 days following the issuance of the Notice of Award. The contractor will be assessed liquidated damages of \$727 per day if the project fails to finish within the established performance period.

#### **7.0 SPARE PARTS**

Refer to other sections herein for requirements.

#### **8.0 REFERENCES**

Refer to Attached Binders for CMU Wall, Guard Towers, Fighting Positions, and Roads.

-- End of Section --

## **SECTION 01015**

### **TECHNICAL REQUIREMENTS – DESIGN/BUILD**

#### **GENERAL**

##### **COMPLIANCE**

The Contractor's design and construction must comply with technical requirements contained herein. The designer shall have a minimum of 5 years experience with the design and construction of the same magnitude and complexity as required in this project. The Contractor shall provide design and construction using the best blend of cost, construction efficiency, system durability, ease of maintenance and environmental compatibility.

##### **MINIMUM & ALTERNATE REQUIREMENTS**

The design and product requirements stated within these documents are minimum requirements. The design technical requirements listed in the references and codes, section 1.8 shall apply to this project. Any deviation from the technical requirements shall be approved by the Contracting Officer. Request for deviations shall be submitted for approval. The Contractor may propose alternate design or products (equipment and material) that are more commonly used in the region; but these variations shall be equal in performance from a technical standpoint as well as more cost effective or allow for more timely completion. Variations shall furnish the same system safety, durability, ease of maintenance and environmental compatibility. The Contractor will be required to submit information as specified in the Section 01335, 3.6.4 Variations for all variations to make a comprehensive comparison of the proposed alternate. All variations of approved designs must be approved by the Contracting Officer.

##### **ASBESTOS CONTAINING MATERIALS**

Asbestos containing material (ACM) shall not be used in the design and construction of this project. If no other material is available which will perform the required function or where the use of other material would be cost prohibitive, a waiver for the use of asbestos containing materials must be obtained from the Contracting Officer.

##### **SAFETY**

##### **Unexploded Ordnance (UXO)**

The contractor is responsible for identification and clearing of UXO/land mines. It is the responsibility of the Contractor to be aware of the risk of encountering UXO/mines and to take all actions necessary to assure a safe work area to perform the requirements of this contract. If during construction, the contractor becomes aware of or encounters UXO/mines or potential UXO/mines, the contractor shall immediately notify the COR, mitigate any delays to scheduled or unscheduled contract work, and clear/remove the UXO/mines. The contractor may only provide clearance/removal services via UNMACA accredited entities. Clearance/removal may only be undertaken in accordance with IMAS/AMAS standards. The Contractor assumes the

risk of any and all personal injury, property damage or other liability arising out of or resulting from any Contractor action taken hereunder. Scrap metal shall be the property of the Host Government. The scrap metal on site shall be moved to an area away from the site perimeter as directed by the Contracting Officer's Representative and left for the Host Government to remove and/or salvage.

NOTE: For previous UXO/mine information, and a copy of the clearance certification the following points of contact from the UN Mine Action Center of Afghanistan are provided:

Mohammad Sediq, Chief of Operations,  
Email: [sediq@unmaca.org](mailto:sediq@unmaca.org)  
Cell: +93 070 295207

Hansie Heymans, Chief Information Officer,  
Email: [hansie@unmaca.org](mailto:hansie@unmaca.org)  
Cell: +93 070 294286

### **1.2.2 Unexploded Ordnance (UXO) Safety Support During Construction.**

The contractor is responsible for identification and clearing of UXO/land mines. It is the responsibility of the Contractor to be aware of the risk of encountering UXO and to take all actions necessary to assure a safe work area to perform the requirements of this contract. If after the entire site has been cleared of UXO/mines per the International Mine Action Standards (IMAS) and clearance is done to the anticipated foundation depth, the Contractor becomes aware of or encounters UXO or potential UXO during construction, the Contractor shall immediately stop work at the site of the encounter, move to a safe location, notify the COR and Demining Contractor/ Demining Sub-Contractor, and mitigate any delays to scheduled or unscheduled contract work. The Demining Contractor/ Demining Sub-Contractor shall remove and dispose of UXO's per the International Mine Action Standards (IMAS). These standards can be found at <http://www.mineactionstandards.org>. The Contractor assumes the risk of any and all personal injury, property damage or other liability, arising out of and resulting from any Contractor action hereunder. In these cases the contractor shall be required to identify and dispose of the ordnance.

## **LIMITATION OF WORKING SPACE**

The Contractor shall, except where required for service connections or other special reason(s), confine his operations strictly within the boundaries of the site. Workmen will not be permitted to trespass on adjoining property. Any operations or use of space outside the boundaries of the site shall be by arrangement with all interested parties. It must be emphasized that the Contractor must take all practical steps to prevent his workmen from entering adjoining property and in the event of trespass occurring the Contractor will be held entirely responsible.

Areas located immediately outside the construction area are known to contain mines and unexploded ordnance (UXO). Contractors assume all risks when venturing in or out of the designated work area.

## **TEMPORARY STRUCTURES**

The Contractor shall erect suitable temporary fences, and necessary structures to safeguard the site, materials and plant against damage or theft and for the protection of the general public and shall adequately maintain the same throughout the course of the contract.



## **SUBCONTRACTORS**

Compliance with the provisions of this section by subcontractors will be the responsibility of the contractor.

### **LIST OF CODES AND TECHNICAL CRITERIA:**

The following codes and technical criteria and those referenced therein shall be required for this project. References within each reference below shall be required and adhered to. If there is conflict in the criteria the most stringent requirement shall be applied. This list is not exhaustive and is not necessarily complete. For codes related to features of this project see the following:

Guard Tower Binder  
Roads Binder  
CMU Wall Binder  
Fighting Position Binder

International Mine Action Standards, latest edition; (see <http://www.mineactionstandards.org> for copy of standards)  
USCINCCENT OPOD 97-1

Overseas Environmental Baseline Guidance Document, Department of Defense, May 2007  
The publications to be taken into consideration shall be those of the most recent editions.

Unified Facility Criteria (UFC) is available online at [http://www.wbdg.org/ccb/browse\\_cat.php?o=29&c=4](http://www.wbdg.org/ccb/browse_cat.php?o=29&c=4)  
In addition, technical criteria provided in USACE-AED Design Requirements (most recent version) shall be required for use in design and construction specifications as indicated in the following documents. The following design criteria shall be used:

AED Design Requirements - Site Layout Guidance, March 2009  
AED Design Requirements – Hydrology July 2009  
AED Design Requirements - Culvert and Causeway Design, June 2009  
AED Design Requirements - Vertical Curves, March 2009  
AED Design Requirements – Horizontal Curves & Super elevation March 2009  
AED Design Requirements – Geotechnical Investigations for USACE Projects July 2009

Standards other than those mentioned above may be accepted if the standards chosen are internationally recognized and meet the minimum requirements of the specified standards. The Contractor shall be prepared to submit proof of this if requested by the Contracting Officer.

## **SITE DEVELOPMENT**

### **GENERAL**

The project includes furnishing all materials, equipment and labor for constructing electrical, water, communication, sanitary sewer and storm sewer service lines, as applicable, and connecting to the existing utility networks.

### **ENVIRONMENTAL PROTECTION**

#### **Applicable regulations**

The Contractor shall comply with all Host Nation laws, rules, regulations or standards concerning environmental pollution control and abatement with regard to discharge of liquid waste into natural streams or manmade channels.

The contractor shall review host nation and U.S. Government environmental regulations with the contracting officer prior to design and discharge of any liquid wastes into natural streams or manmade channels.

## **Notification**

The Contracting Officer will notify the Contractor in writing of any observed non-compliance with the foregoing provisions. The Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No extension of time or damages will be awarded to the Contractor unless it was later determined that the Contractor was in compliance.

## **Spillages**

Measures shall be taken to prevent chemicals, fuels, oils, greases, bituminous materials, waste washings, herbicides and insecticides, and construction materials from polluting the construction site and surrounding area.

## **Disposal**

Disposal of any materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., shall be taken to a dumpsite off site and subject to the approval of the Contracting Officer. Burning at the project site for the disposal of refuse and debris will not be permitted.

## **CIVIL SITE DEVELOPMENT**

### **Site Plan**

The contractor shall prepare plat or plan of property as part of the design package consists of a Boundary Survey of Gardez Compound located in Paktya Province in the city of Gardez, Afghanistan. Site address is as follows, TFI-121/USACE, FOB LIGHTNING, AE, APO 09354 . The survey shall show the closure of the property boundary consisting of identifying all property corners, establishing horizontal and vertical control listing all bearing and distances of property lines from the centerline of all adjacent roads. The contractor shall place property corner markers and a monument on the property showing site elevations, coordinate grid systems and WGS 84 latitude longitude. This survey shall meet the requirements of World Geodetic System 1984 (WGS 84 UTM Zone 42N in decimal degrees. The survey design shall include topographic map and the locations of all building corners, structures, major trees, road right of ways, names of roads, widths of roads, easements, right of ways, setbacks, parking and paving areas, storage containers, stoops, sidewalks and walkways, above ground utilities, electrical and bunker locations. The contractor shall identify and show perimeter walls, fences, Hesco barriers, guard towers and entry control point structures. The contractor shall locate the facilities in general agreement with the drawings included and any requirements in the Scope of Work 01010. All site features shall be clearly defined and dimensioned on the site plan. Buildings shall be located to provide access for emergency vehicles and fire fighting. Roads and parking areas shall be designed for turning radius of the largest vehicle entering the compound. The site plan shall show geometric design of the site, including applicable dimensions of all exterior facilities, mechanical equipment, pavements, utilities, etc. Required facilities are described in the following sections of this specification. All roads and areas where tractor-trailer vehicles will travel shall be designed for the worst case turning radius. Design and construction of roads and pavements shall be based on recommendations from geotechnical investigation required herein. All site plans and master plans shall be drawn in the following projection and datum for incorporation into the U.S. Army Corps of Engineers GIS system:

WGS 1984 UTM Zone 42 N

### **Demolition**

Demolition shall include removal of all structures, foundations, pavements, and utilities, and clear and grubbing. All refuse and debris shall be disposed of off of the site. Holes and depressions shall be backfilled. Fill materials shall

be composed of satisfactory soils or aggregates defined in ASTM D 2487 as GW, GP, GM, SP, SM, and SW. Minimum soil compaction shall be 95 percent of maximum density as defined in ASTM D 1557. Scrap metal shall be the property of the Host Government. The scrap metal on site shall be moved to an area away from the site perimeter as directed by the Contracting Officer's Representative and left for the Host Government to remove and/or salvage. Demolished fencing and concertina wire shall be neatly rolled up for reuse by the host government. Likewise, used fence posts and outriggers shall be neatly stockpiled for reuse by the host government.

## **Site Grading & Drainage**

The contractor will provide all necessary site grading to insure adequate drainage so that no areas will be flooded due to a rainfall of a 10-year frequency. Drainage of the area should be compatible with the existing terrain. Building floor elevation shall be a minimum 150mm above grade and slope away from the building on all sides at a minimum of 5% for 3 meters. Protection of facilities from flood waters originating offsite of an installation shall be based on a rainfall for a 25-year frequency event. This shall include the design or evaluation of bridges (not culverts or causeways) on road projects. Rainfall data shall be based on data obtained from meteorological records collected in Afghanistan. National agencies may be consulted for data. In the absence of site specific data, intensity-duration-frequency curves contained in the AED Design Requirements – Hydrology July 2009 shall be used by extrapolating the rainfall intensity information from the stations in closest proximity to the project. Under no circumstances will relationships developed by extrapolation from foreign countries be used for hydrologic studies.

## **Roads**

**Road and Parking Layout and Traffic Assumptions.** The roads shall be constructed according to the design specified here and in the drawings. The traffic distribution constituting the design basis is as follows. The traffic on the road will consist of a mixed distribution of traffic patterns. Ten percent (10%) of the traffic is assumed to be 40 metric-ton five-axle vehicles. Twenty-five (25%) of the traffic is assumed to be 20 metric-ton three axle vehicles. The remaining 75% of the traffic is assumed to be single unit trucks and passenger vehicles. The existing subgrade is assumed to have a CBR greater than 5. The minimum turning radius for all driving surfaces, and parking layouts shall be 13 meters unless noted otherwise on the drawings.

**Aggregate Roads and Parking.** Aggregate roads and parking are designated on the Drawings. All aggregate roads shall be of wearing surface 7.3 meters (24 feet) wide, unless otherwise noted, graded for proper drainage, provided with necessary drainage structures and completed with prescribed surfaces in accordance with applicable sections of TM 5-822-2 and UFC 3-250-09FA standards. Aggregate road and parking structure shall consist of 150mm (6 inches) thick aggregate surface course material compacted to 98% maximum modified proctor density placed above 150mm (6 inches) of base course compacted to 95% maximum modified proctor density. The top 150mm (6 inches) of the subgrade shall be scarified and compacted to 95% maximum modified proctor density.

**Paved Roads and Parking.** Paved roads and parking are designated on the Drawings. All paved roads shall be of wearing surface 7.3 meters (24 feet) wide, unless otherwise noted, graded for proper drainage, provided with necessary drainage structures and completed with prescribed surfaces in accordance with applicable sections of TM 5-822-2 and UFC 3-250-01FA standards. The roads shall be crowned and graded with a minimum 2% cross slope. Paved road and parking structure shall have 150 mm (6 inch) base course minimum compacted at 98% maximum modified proctor density placed over 250 mm (10 inches) of subbase which shall be surfaced with a minimum of 100 mm (4 inch) hot mix asphalt concrete compacted at 100%, unless otherwise noted. The top 150 mm (6 inch) of the subgrade shall be scarified and compacted to 95% maximum modified proctor density. All roads shall be provided with a 1.0 meter wide shoulder on both sides of roadways, consisting of an aggregate surface course material and it should be 150mm thick @ 2.0% slope.

Storm Drainage System. A storm drainage system shall be provided unless noted otherwise. The system shall consist of either unlined swales or concrete trenches or shall meet the existing drainage structures in type and material.

Parking Areas. Parking areas are shown on the Drawings. Provide parking areas to the dimensions shown or sized to provide adequate space and configuration for the for the number and types of vehicles indicated on the drawings. The minimum turning radius for entrance and exit construction to all parking areas shall be 13 meters unless noted otherwise on the drawings.

## **FORCE PROTECTION DESIGN**

The Contractor shall design and construct force protection measures to include a complete perimeter wall, Guard Towers, Compound Illumination System, Security Communication Systems and Entry Control Points (ECP). ECP shall be composed of a Primary ECP, a Stand-Off ECP, and a Secondary ECP. The Force Protection design shall incorporate minimum setbacks for new facilities to maximum extent possible as permitted by size of the site and the requirements of the user. Force protection design shall be in accordance with Joint Security Directorate Antiterrorism/Force Protection Guide, March 2002. Force Protection design shall also meet the requirements of UFC 4-010-01, Design: Minimum DoD Antiterrorism Standards for Buildings, 8 Oct 2003 and UFC 4-010-02, DoD Minimum Antiterrorism Standoff Distances for Buildings, 8 Oct 2003 and Joint Security Directorate Antiterrorism/Force Protection Guide, March 2002.

See Appendix A for Gate House, Guard Shack, and Guard Tower building designs and standard details for Perimeter Security wall, and Active and Passive Vehicle Barriers.

## **PERIMETER SECURITY WALL**

Perimeter Security Wall. CMU block walls, shall be constructed at the location(s), height and thickness shown on the drawings. The height of the walls shall be measured from the inside grade. Inside grade shall in all cases be higher than outside grade. The foundation width shall be as shown. The wall shall be capped with a cast-in-place concrete capping. Outriggers to support barbed wires and a single-coil concertina style razor wire shall be provided and installed by the contractor. Site grading outside the wall must slope away from the walls for at least a distance of 5 meters. The distance from grade to top of wall shall not be less than 2.5m at a distance 10m outside the wall. The wall shall be designed to prevent visual access to the inside of compound by all pedestrian and vehicular traffic outside the compound. This may require the wall to be built at a higher level in some locations. Any penetrations through the Perimeter Security Wall shall only be for site drainage purposes and shall have force protection such as a welded bar grill, welded grating, or other pre-engineered barrier. Reinforced Barbed Tape. Reinforced barbed tape shall be 600 mm diameter concertina style coil consisting of 31 loops. Each loop shall consist of 19 barb clusters per loop. Adjacent coils loops shall be alternately clipped together at three points about the circumference to produce the concertina effect upon deployment. Spacing between attachments points when deployed shall be 400 mm. The reinforced barbed tape shall be fabricated from 430 series stainless steel with hardness range of Rockwell (30N) 37-45 conforming to the requirements of ASTM A 176. Each barb shall be a minimum of 30.5 mm (1.2 inch) in length, in groups of 4, spaced on 102 mm (4 inch) centers. The stainless steel core wire shall have a 2.5 mm (0.098 inch) diameter with a minimum tensile strength of 895 MPa. Sixteen gauge stainless steel twistable wire ties shall be used for attaching the barbed tape to the barbed wire. The reinforced barbed tape shall be equivalent to NSN: 5660-01-457-9852.

Outriggers. Outrigger supporting arms shall be “Y” shaped with post securely embedded into the top of the wall. Posts shall conform to ASTM F 1083, Pipe, Steel, Hot Dipped Zinc Coated (Galvanized) Welded.

## **PERIMETER WALL ACCESS GATES**

### **OUTRIGGERS**

Outrigger supporting arms shall be “Y” shaped with post securely embedded into the top of the wall. Posts shall conform to ASTM F 1083, Pipe, Steel, Hot Dipped Zinc Coated (Galvanized) Welded.

## REINFORCED BARBED TAPE

Reinforced barbed tape shall be 600 mm diameter concertina style coil consisting of 31 loops. Each loop shall consist of 19 barb clusters per loop. Adjacent coils loops shall be alternately clipped together at three points about the circumference to produce the concertina effect upon deployment. Spacing between attachments points when deployed shall be 400 mm. The reinforced barbed tape shall be fabricated from 430 series stainless steel with hardness range of Rockwell (30N) 37-45 conforming to the requirements of ASTM A 176. Each barb shall be a minimum of 30.5 mm (1.2 inch) in length, in groups of 4, spaced on 102 mm (4 inch) centers. The stainless steel core wire shall have a 2.5 mm (0.098 inch) diameter with a minimum tensile strength of 895 MPa. Sixteen gauge stainless steel twistable wire ties shall be used for attaching the barbed tape to the barbed wire. The reinforced barbed tape shall be equivalent to NSN: 5660-01-457-9852.

## GUARD TOWER STAIR REPLACEMENT/UPGRADE ELECTRICAL

**Stair Replacement/Upgrade.** At designated guard towers, upgrade the existing stairs and all associated components. Remove the existing stairs only when all components necessary to complete the upgrade are on site and prepared for installation. Contractor shall provide temporary access to the guard tower during construction of the new stairs. At no time shall access to the tower be restricted due to lack of stairway access. If possible, the existing foundations shall be reused for the new stairs. If reuse is not possible, the foundations shall be removed and new foundations shall be built. Footings for the stairs shall be constructed to the dimensions shown. Subgrade for the footings shall be excavated as required and properly prepared to prevent freezing as specified. Existing hardware and connections securing the existing stairs to the existing guard tower shall be removed with minimal damage to the tower structure. The contractor shall repair concrete and wood damage as required to achieve a professional appearance. Structural damage warranting more than cosmetic repair shall be immediately brought to the attention of the COR prior to constructing any new features or installing any new hardware. New connections to the towers shall be installed per the drawings using the hardware and methods shown. Loads and capacities shown and specified shall be provided.

**Electrical Modifications.** The condition and capacity of the existing electrical shall be inspected and any irregularities or deficiencies shall be immediately brought to the attention of the COR. *Ceiling Fan.* One ceiling fan shall be installed per 10 square meters of floor space within the guard tower. A minimum of one fan shall be installed in each tower. The existing lighting circuit is allowed to be used to power the ceiling fan(s) as long as the circuit is not loaded to more than 16A. Branch circuit that powers ceiling fan shall be homerun to a panel board mounted on the interior of the guard tower.

*Unit Heater.* One electric resistance unit heater shall be installed per 40 square meters of floor space within the guard tower. A minimum of one unit heater shall be installed in each tower. The unit heater shall be powered by a dedicated branch circuit with the breaker and conductor sized per the NEC. A surface mounted safety switch shall be sized per the NEC and installed near each unit heater to provide means to disconnect power to the heater(s). Branch circuit feeding unit heater shall be homerun to a panelboard mounted on the interior of the guard tower.

*Panelboard feeder.* The guard towers are fed from 20A breakers in panels H1, K1, M1, and O1. These panels are located in the Warehouse, Ammunition Supply, Gatehouse, and Fuel Canopy, respectively. The contractor shall replace each 20A guard tower feeder breaker with a 40A breaker. If existing underground feeder conductors are smaller than 16mm<sup>2</sup>, they shall be replaced with 2-16mm<sup>2</sup> & 6mm<sup>2</sup>. Contractor shall measure the length of each guard tower feeder and determine the voltage drop of the feeder per the attached document. Anticipated load of each guard tower is 3.7kVA.

**If an Existing Guard Tower Panelboard is Present.** The contractor shall evaluate the capacity of the existing panelboard to determine if it can support the additional load of the ceiling fan and unit heater. If the panelboard can support the additional load, the unit heater shall be connected to a spare 20A circuit. If the panelboard is unable to support the additional load, it shall be replaced with a panelboard as specified below.

**If NO Existing Guard Tower Panelboard is Present.** The contractor shall remove existing distribution J-Box in Guard Tower and replace with a surface-mounted panelboard complete with main breaker, minimum 60A bus, minimum six (6) 20A branch circuit breakers, 220V, 50Hz. consist

## **GEOTECHNICAL**

### **SOIL INVESTIGATION**

Existing geotechnical information is not available at the project site. Any site-specific geotechnical data required to develop foundations, materials, earthwork, and other geotechnical related design and construction activities for this project shall be the Contractor's responsibility. The Contractor shall develop all pertinent geotechnical design and construction parameters by appropriate field and laboratory investigations and analyses. The Contractor shall produce a detailed geotechnical report containing field exploration and testing results, laboratory testing results (particle sizes and distribution, liquid and plastic limit test, and moisture and density test, etc.). Information in the report shall include, but not limited to: existing geotechnical (e.g. surface and subsurface) conditions, location of subsurface exploration logs on site plan, exploration point, allowable soil bearing capacity and foundations recommendations, bearing capacity, pavement design criteria (e.g. CBR values, K values), ground-water levels, and construction materials (e.g. concrete cement, asphalt, and aggregates). For standard penetration test (SPT), the Contractor shall use ASTM D1586. All geotechnical laboratory and field work shall be based on standards set forth in the ASTM. Contractor shall not use any DIN standards for penetration tests in lieu of ASTM D 1586. Soil investigations shall conform with AED Design Requirements: Geotechnical Investigations for USACE Projects, July 2009, or most recent version.

For foundation design, allowable soil bearing pressures, shall be based on the International Building Code (IBC) 2006 Table 1804.2. The contractor shall conduct soils classification per ASTM D 2487-06. There shall be no variation from the values listed in the table above, unless the soils investigation indicates lower allowable values should be used.

The contractor shall submit a geotechnical investigation plan prior to commencing any field investigation to the USACE-AED Engineering Branch through the COR for review and approval. Once the plan is reviewed and approved, the Contractor can start the field investigation. The Geotechnical report shall be submitted with all the design review submittals as specified in the 01335. No design review submittal shall be considered complete without an approved geotechnical report. Geotechnical investigation plans and report of investigations shall be submitted promptly in accordance with Section 01335.

### **GEOTECHNICAL QUALIFICATIONS**

A geotechnical engineer or geotechnical firm responsible to the Contractor shall develop all geotechnical engineering design parameters. The geotechnical engineer or geotechnical firm shall be qualified by: education in geotechnical engineering; professional registration; and a minimum of ten (10) years of experience in geotechnical engineering design. The geotechnical firm conducting either the field investigation or laboratory work shall be certified by the Chief, Quality Assurance Branch USACE-AED. Certification document shall be submitted as part of the Geotechnical Report.

## **STRUCTURAL**

### **GENERAL**

The project consists of various structures. Foundation shall be properly placed on suitable compacted ground area and shall be in accordance with the recommendations from the geotechnical investigation. Building foundations shall be founded a minimum of 800mm below grade. Foundation designs shall be corroborated with the geotechnical findings and recommendations.

## DESIGN

Design shall be performed and design documents signed by a registered professional architect and/or engineer. Calculations shall be in SI (metric) units of measurements. All components of the structures shall be designed and constructed to support safely all loads without exceeding the allowable stress for the materials of construction in the structural members and connections.

## STANDARDS

The Contractor should use the following American standards to provide sound structural design if local standards are not available, relevant, or applicable. The Contractor shall follow American Concrete Institute Standards for design and installation of all concrete structures.

Concrete	ASTM C 39 and ACI 318; 28 MPa ( $f'_c = 4,000\text{psi}$ ) minimum specified compressive strength @ 28 days, and maximum water-cement ratio of 0.45.
Steel Reinforcement	ASTM A 615; 420 MPa ( $F_y = 60\text{ksi}$ ) yield strength.
Welded Wire Fabric	ASTM A 185.
Anchor Bolts	ASTM F 1554; Grade 36 steel.
Bolts and Studs	ASTM A 307.
Plaster	ASTM C 926; 14 MPa ( $f'_c = 2,000\text{psi}$ ).
Concrete Masonry Units	ASTM C 90; Type I (normal weight, moisture control).
Mortar	ASTM C 270; Type S (Ultimate compressive strength of 13 MPa) Proportion: 1 part cement, 0-1/2 part lime and 4-1/2 parts aggregate.
Grout	ASTM C 476; 14 MPa (2,000psi) minimum compressive strength @ 28 days (Slump between 200 mm to 250mm).
CMU Joint Reinforcement	Standard 9 gauge minimum, Ladder Type.
Structural Steel	ASTM A 36; 250 MPa ( $F_y = 36,000\text{psi}$ ).
Welding	AWS D1.1 (American Welding Society).

## DEAD AND LIVE LOADS

Dead loads consist of the weight of all materials of construction incorporated in the buildings. Live loads used for design shall be in accordance with the Structural Load Data, UFC-3-310-01, and edition as referenced herein.

## WIND LOADS

Wind loads shall be calculated using a "3-second gust" wind speed of 135 km/hr.

## SEISMIC

The building and all parts thereof shall be designed for the seismic requirements as defined by the International Building Code referenced herein.

Spectral ordinates shall be  $S_s = 1.28g$  and  $S_1 = 0.51g$ .

## STRUCTURAL CONCRETE

Concrete structural elements shall be designed and constructed in accordance with the provisions of the American Concrete Institute, Building Code Requirements for Structural Concrete, ACI 318, latest edition. A minimum cylinder 28 day compressive strength of 28 MPa (4,000 psi) shall be used for design and construction of all concrete, except that 24 MPa (3,500 psi) shall be used for Shotcrete applications. Reinforcing steel shall be deformed bars conforming to American Society for Testing and Materials publication ASTM A 615, Deformed and Plain Billet-Steel Bars for Concrete Reinforcement. Concrete shall have maximum water-cement ratio of 0.45. No concrete shall be placed when the ambient air temperature exceeds 32 degrees C (90 degrees F) unless an

appropriate chemical retardant is used. In all cases when concrete is placed at 32 degrees C (90 degrees F) or hotter it shall be covered and kept continuously wet for a minimum of 48 hours. Concrete members at or below grade shall have a minimum concrete cover over reinforcement of 75 mm (3 inches).

## **MASONRY**

Masonry shall be designed and constructed in accordance with the provisions of Building Code Requirements for Masonry Structures, ACI 530/ASCE 5/TMS 402, latest editions. Mortar shall be Type S and conform to ASTM C 270. Masonry shall not be used below grade. All cells of exterior reinforced CMU walls shall be fully grouted. For interior CMU walls, only the reinforced cells need to be grouted. All CMU walls shall have reinforced horizontal bond beams at a maximum spacing of 1,200 mm on center.

## **STRUCTURAL STEEL**

Structural steel shall be designed and constructed in accordance with the provisions of American Institute of Steel Construction (AISC), Specifications for Structural Steel Buildings (latest edition). Design of cold-formed steel structural members shall be in accordance with the provisions of American Iron and Steel Institute (AISI), Specifications for Design of Cold-Formed Steel Structural Members.

## **METAL DECK**

Deck units shall conform to SDI Publication Number 29. Panels of maximum possible lengths shall be used to minimize end laps. Deck units shall be fabricated in lengths to span three or more supports with flush, telescoped or nested 50 mm (2 inch) laps at ends, and interlocking, or nested side laps. Metal deck units shall be fabricated of steel thickness required by the design and shall be galvanized.

## **FOUNDATIONS**

Foundations shall be in accordance with the Geotechnical requirements of this RFP.

## **EARTHWORK AND FOUNDATION PREPARATION**

### **Capillary Water barrier**

ASTM C 33 fine aggregate grading with a maximum of 3 percent by weight passing ASTM D 1140, 75 micrometers, No. 200 sieve, or 37.5mm and no more than 2 percent by weight passing the 4.75mm No. 4 size sieve and conforming to the soil quality requirements specified in the paragraph entitled "Satisfactory Materials."

### **Satisfactory Materials**

Any materials classified by ASTM D 2487 as GW, GW-GM, GW-GC, SW, SW-SM, or SW-SC and free of debris, roots, wood, scrap material, vegetation, refuse, soft unsound particles, or objectionable materials. Unless specified otherwise, the maximum particle diameter shall be one-half the lift thickness at the intended location.

### **Unsatisfactory Materials**

Any materials which do not comply with the requirements set forth in the Satisfactory Materials paragraph. Unsatisfactory materials also include man-made fills, trash, refuse, or backfills from previous construction. Unsatisfactory material also includes material classified as satisfactory which contains root and other organic matter, frozen material, and stones larger than 75mm. The Contracting Officer shall be notified of any unsatisfactory materials.



## **Clearing and Grubbing**

Unless indicated otherwise, remove tress, stumps, logs, shrubs, brush and vegetation, and other items that would interfere with construction operations within lines 1.5 meters outside of the building and structure line. Remove stumps entirely. Grub out matted roots and roots over 50mm in diameter to at least 460mm below existing surface.

## **Stripping**

Strip suitable soil from the site where excavation or grading is indicated and stockpile separately from other excavated material. Material unsuitable for use as topsoil shall be stockpiled and used for backfilling. Locate topsoil so that the material can be used readily for the finished grading. Where sufficient existing topsoil conforming to the material requirements is not available on site, provide borrow materials suitable for use as topsoil. Protect topsoil and keep in segregated piles until needed.

## **Excavation and Compaction of Fill**

Excavate to contours, elevation, and dimensions indicated. Reuse excavated materials that meet the specified requirements for the material type required at the intended location. Keep excavations free from water. Excavate soil disturbed or weakened by Contractor's operations, soils softened or made unsuitable for subsequent construction due to exposure to weather. Excavations below indicated depths will not be permitted except to remove unsatisfactory material. Unsatisfactory material encountered below the grades shown shall be removed as directed. Refill with satisfactory material and compact to at least 95 percent of the maximum dry density, as determined by the Modified Proctor laboratory procedure. ASTM D 1557 shall be used for producing the Modified Proctor moisture-density curve, unless the soil to be compacted includes more than 30% retained on the 19 mm (3/4") sieve. In this case, the Contractor must replace the ASTM D 1557 laboratory compaction procedure with AASHTO T 180, Method D, corrected with AASHTO T 224.

During compaction, the moisture content of the soil shall be within 1.5 percent of the optimum moisture content, as determined by the Modified Proctor laboratory procedure. The thickness of compacted lifts shall not exceed 15 cm and the dry density of each compacted lift shall be tested by either sand cone (ASTM D 1556) or nuclear gage (ASTM D 2292). If the nuclear gage is used, it must first be compared to sand cone tests for each soil type to verify the accuracy of the nuclear gage measurements for moisture content, wet density, and dry density. Furthermore, every tenth nuclear gage test must be accompanied by a sand cone test and these verification data must be summarized and submitted to the Contracting Officer. Density tests shall be performed at a frequency of not less than one test for each 200 square meters and not less than two tests per compacted lift.

## **STRUCTURES WITH SPREAD FOOTINGS**

Ensure that footing subgrades have been inspected and approved by the Contracting Officer prior to concrete placement. Fill over excavations with concrete during foundation placement.

## **ARCHITECTURAL REQUIREMENTS**

### **GENERAL**

All material approved shall become standardized material to be used throughout the facilities under contract. Different sub-contractors shall not use different material or standards under the contract. Intent of the project is to use locally procured materials (unless specified otherwise) and labor to the maximum extent possible while satisfying seismic, international building code, and national fire protection agency life safety code. Conflicts between criteria shall be brought to the attention of the Contracting Officer for resolution. In such instances, the Contractor shall furnish all available information with justification to the Contracting Officer.

## **DESIGN CRITERIA**

Provided in the attached appendixes, are schematic designs for the facility types requested in this proposal. These designs shall be used to create a complete and usable facility meeting the minimum requirements placed herein. [Exceeding the minimum requirements as improvements to the design stated herein is highly encouraged at no additional cost and as approved by the government.] The Codes, Standards, and Regulations listed herein shall be used in the construction of this project. The publications shall be the most recent editions. Standards other than those mentioned may be accepted provided they meet the minimum requirements and the contractor shall submit proof of equivalency to the Contracting Officer for approval.

IBC - International Building Code, latest edition

NFPA 101 - Life Safety Code, latest edition

## **LIFE SAFETY/ FIRE PROTECTION/ HANDICAPPED ACCESSIBILITY**

A life safety and fire protection analysis shall be completed prior to construction commencement. This analysis shall be documented in plans and in the design analysis. All spaces shall be classified following NFPA 101 or IBC. Whichever code used shall be stated and referenced on the life safety plan. The facility shall comply with all other safety requirements of the NFPA 101. To the extent possible, all facilities will be designed in accordance with recognized industry standards for life safety and building egress. An adequate fire alarm system, fire extinguishers, and smoke alarms shall all be included as required. Due to the lack of adequate water volume and pressure, sprinkler systems are not feasible. In keeping with the intended function of these facilities, handicapped accessibility will not be incorporated into this project. Due to the war contingency requirement, it is assumed that only able-bodied military and civilian personnel will use the facilities listed herein.

## **ANTITERRORISM/ FORCE PROTECTION**

Force protection/anti-terrorism measures for this location shall be followed and incorporated into this project as indicated, in accordance with the referenced DoD Regulations. Information regarding force protection may be found herein and at the following link: [www.tisp.org](http://www.tisp.org) . UFC 04-010-01DoD Minimum Antiterrorism standards for buildings, including change 1, 22 January 2007; is the primary DoD AT/FP regulation for projects.

## **CONCRETE**

### **Finish**

Horizontal finish shall be toweled or screed. If finish is exposed concrete, then the floor shall be a broom finish for texture and shall not interfere with sloping for drainage of the surface. Vertical work shall have a form finish. Exposed concrete shall be sealed with an approved sealer.

### **Concrete Masonry units**

Storage of masonry materials shall be in a dry place or materials shall be covered with a plastic protective layer. Cover open walls each day to keep them protected and dry. Concrete masonry units (CMU) for exterior walls shall be either 190 mm or 290 mm wide x 390 mm x 190 mm high as shown on drawings. They shall be installed in running bond level and plumb. Mortar joints shall be 10 mm on all sides between CMU. Install only quality units. The surface shall be free of chips, cracks, or other imperfections that would detract from the overall appearance of the finished wall. Defective CMU or mortar shall be rejected.

## **PRECAST**

Storage of precast units shall be in a dry place or materials shall be covered with a plastic or protective layer. Units shall be detailed to provide size, shape and location of installation. Precast units shall meet the minimum concrete strength requirements.

## MASONRY

Stone type shall be identified for approval in design. Mortar shall be of lower strength than stone and weep holes shall be provided in cavity wall systems. Masonry construction systems shall be reinforced.

## THERMAL PERFORMANCE OF EXTERNAL BUILDING ASSEMBLIES

External building assemblies shall meet the requirements of TI-800, Design Criteria, UFC 3-400-01 Design: Energy Conservation, and ASHRAE Standard 90.1, latest editions, but shall meet the following minimum requirements:

Assembly	Minimum Thermal Value
Exterior walls (above grade)	RSI 2.280 (R 13)
Ceilings/roof	RSI 5.284 (R 30)
Floor (over unheated space)	RSI 3.346 (R 19)
Exterior doors	RSI 0.252 (R 1.43)
Exterior windows/(glazing within doors)	RSI 0.308(R 1.75)
Skylights	RSI 0.180 (R 1.02)

This table is a summary of ANSI/ ASHRAE 90.1 Table 5.5-5, Climate Zone 5 (A,B,C)  
RSI measured in K-m<sup>2</sup>/W, R measured in SF-F-hr/BTU. 1 K-m<sup>2</sup>/W = 5.678 SF-F-hr/BTU.  
The building design shall utilize solar heating by orientating the buildings and wind breaks, insulation and exterior window shading techniques to reduce building heat loss and heat gain. Contractors shall include energy efficient heating and cooling solutions to minimize energy consumption.

## CARPENTRY

The use of wood framing as indicated below is acceptable only where allowed by IBC and NFPA 101.

### Wood Purlins

If Contractor chooses to utilize wood purlins, provide and install roof purlins of natural wood, locally available material securely wedged between steel H structural joists. Tightly fit 25mm or 30 mm boards over roof structure and nail into wood purlins. New roofing shall extend a minimum of 600 mm past the exterior surface of the wall.

### Wood Battens

If Contractor chooses to utilize wood ceiling batten strips, wood ceiling batten strips, 20 mm x 60 mm, shall be nailed to the bottom of the wood purlins. Battens shall be spaced at 400 mm on center (or per UBC requirements if sheetrock is substituted for plaster). This is for the support of a plaster ceiling.

## CONNECTIONS AND JOINTING

### Soldering

Soldering shall apply to copper and stainless steel items. Edges of sheet metal shall be pre-tinned before soldering is begun. Soldering shall be done slowly with well heated soldering irons so as to thoroughly heat the seams and completely sweat the solder through the full width of the seam. Edges of stainless steel to be pre-tinned shall be treated with soldering acid flux. Soldering shall follow immediately after application of the flux. Upon completion of soldering, the acid flux residue shall be thoroughly cleaned from the sheet metal with a water solution of washing soda and rinsed with clean water.

## **SEAMING**

Flat-lock and soldered-lap seams shall finish not less than 25 mm. wide. Unsoldered plain-lap seams shall lap not less than 75 mm. unless otherwise specified. Flat seams shall be made in the direction of the flow.

## **CLEATS**

A continuous cleat shall be provided where indicated or specified to secure loose edges of the sheet metalwork. Butt joints of cleats shall be spaced approximately 3 mm. apart. The cleat shall be fastened to supporting wood construction with nails evenly spaced not over 300 mm. on centers. Where the fastening is to be made to concrete or masonry, screws shall be used and shall be driven in expansion shields set in concrete or masonry.

## **METAL**

### **STEEL HANDRAILS**

Steel handrails shall be steel pipe conforming to ASTM A 53/A 53M, and shall have a nominal diameter of 50 mm. Handrails shall be designed to resist a concentrated load of 490 N in any direction at any point on the top of the rail or 290 N applied horizontally to the top of the rail, whichever is more severe. Installation of handrails shall be with expansion shields and bolts into masonry and/or concrete, and full length welds of metal posts to stair stringers. Railings shall be hot dipped galvanized [and shop painted]. Pipe collars of the same material and finish as the handrail shall be provided.

### **METAL STAIRS**

Provide galvanized steel stair stringers and treads. Treads shall be grated galvanized steel along with welds or fasteners. Stairs shall be designed and constructed to support live load of not less than 500 kg (100psf) per square meter and a concentrated load of 1.3 kN (300lbs).

## **Materials**

Any metal listed by ASTM, DIN, BS or EN standards. Manual for a particular item may be used, unless otherwise specified or indicated. Materials shall conform to the requirements specified below and to the thicknesses and configurations established in ASTM, DIN, BS or EN standards. Different items need not be of the same metal, except that if copper is selected for any exposed item, all exposed items shall be copper.

## **Wall Capping**

Wall Capping shall be installed according to the manufacturer's recommendations.

## **SEALANTS**

Provide a sealant compatible with the material(s) to which it is applied. Do not use a sealant that has exceeded shelf life or has jelled and cannot be discharged in a continuous flow from the gun. Apply the sealant in accordance with the manufacturer's instructions with a gun having a nozzle that fits the joint width. Force sealant into joints to fill the joints solidly without air pockets. Tool smooth fresh sealant after application to ensure adhesion. Sealant shall be uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints; apply sealant, and tool smooth as specified. Sealer shall be applied over the sealant when and as specified by the sealant manufacturer.

## **Interior Sealant**

ASTM C 834 or ASTM C 920, Type S or M, Grade NS, Class 12.5. Use NT, DIN, BS, or EN equal standards.

## **Exterior Sealant**

For joints in vertical and horizontal surfaces, provide ASTM C 920, Type S or M, Grade NS, DIN, BS, or EN equal standards.

## **Floor Joint Sealant**

(ASTM C 920) Type S or M, Grade P, class 25

## **Primers**

Provide a non-staining, quick-drying type and consistency recommended by the sealant manufacturer for the particular application. Immediately prior to application of the sealant, clean out loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's instructions. Do not apply primer to exposed finish surfaces.

## **Bond Breakers**

Provide the type and consistency recommended by the sealant manufacturer to prevent adhesion of the sealant to backing or to bottom of the joint. Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for each type of joint and sealant used, to prevent sealant from adhering to these surfaces. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.

## **Backing**

Backing shall be 25 to 33 percent oversize for closed cell and 40 to 50 percent oversize for open cell material, unless otherwise indicated.

## **Surface Preparation**

Surfaces shall be clean, dry to the touch, and free from dirt frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion. Oil and grease shall be removed with solvent and surfaces shall be wiped dry with clean cloths. When resealing an existing joint, remove existing calk or sealant prior to applying new sealant. For surface types not listed below, the sealant manufacturer shall be contacted for specific recommendations.

## **Masking Tape**

Masking tape shall be placed on the finish surface on one or both sides of a joint cavity to protect adjacent finish surfaces from primer or sealant smears. Masking tape shall be removed within 10 minutes after joint has been filled and tooled.

## **Backstops**

Install backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide a joint of the depth specified.

## **Protection**

Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled.

## **FINAL CLEANING**

Provide cleaning solvent type(s) recommended by the sealant manufacturer except for aluminum and bronze surfaces that will be in contact with sealant. Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

nnnnnnnnn. **Masonry and Other Porous Surfaces:** Immediately scrape off fresh sealant that has been smeared on masonry and rub clean with a solvent as recommended by the sealant manufacturer. Allow excess sealant to cure for 24 hour then remove by wire brushing or sanding.

ooooooooo. **Metal and Other Non-Porous Surfaces:** Remove excess sealant with a solvent-moistened cloth.

## **renovation work**

Disturbed, patched, repaired and renovated areas shall be finished to provide protective coatings. At a minimum, wall and ceiling areas shall be plastered with similar material to match adjacent surfaces. Areas shall be sanded, cleaned and prepared for primer and two coats of paint. Paint shall be feathered out a meter over the existing surfaces to blend in patch work with existing. Areas requiring tiles shall match existing tile areas. All renovated areas shall be returned to a new finished state.

## **Paints & Coatings**

Paints and coatings shall be provided as a specification 09 90 00 Finishes, Paints and Coatings.

## **CONCRETE HARDENER**

Concrete sealers shall be a liquid chemical sealer-hardener compound. Apply a minimum of two coats. Sealer shall be compatible with climate temperatures and not reduce the adhesion of resilient flooring, tile, paint, roofing, waterproofing or other materials applied to the concrete.

## **PAINT**

Paint shall be oil based or latex. A primer shall be placed prior to any coats of paint. A minimum of two (2) coats of paint shall be used for each surface. Existing painted material shall be cleaned, cracks patched, and prepared for new paint.

## **Exposed exterior steel**

Exposed exterior steel shall include items such as trim, frames, door, pipe rails and other exposed steel surfaces. Paint with one coat oil-based primer, with 2 coats of oil-based alkyd gloss enamel, color to be selected by the Contracting Officer from the color board provided by the Contractor.

## **Exposed Wood**

Exposed wood shall include items such as trim, frames, doors and other exposed wood surfaces. Paint with one coat oil-based primer, 2 coats of gloss enamel, color to be selected by the Contracting Officer from the color board provided by the Contractor

## **Expansion Joints In Plaster & Stucco**

Expansion joints shall be provided as specified in ASTM, DIN 18339, BS or EN Standards for all walls, floors and ceilings.

## **Exterior Walls**

The exterior of all buildings shall be stucco and/or plaster conforming to ASTM C926. A temperature of between 4 and 27 degrees C shall exist for a period of not less than 48 hours prior to application of plaster and for a period of at least 48 hours after plaster has set. Control joints shall be designed for expansion and contraction of plaster work due to thermal exposure. Control joints shall comprise of back to back casing beads. Install new stucco in 2 coats. The first coat shall be a scratch coat approximately 10 mm thick. Allow 7 days to cure. The second coat shall be finish stucco, smooth finish, approximately 10 mm thick. Allow 7 days to cure before painting. Stucco showing over sanding, cracks, blisters, pits, checks, discoloration or other defects is not acceptable. Defective plaster work shall be removed and replaced with new plaster at the expense of the Contractor. Patching of defective work will be permitted only when approved by the Contracting Officer. Patching shall match existing work in texture and color. All exterior color finish shall be integral with the stucco finish. No painted stucco shall be permitted due to minimize future maintenance.

## **MECHANICAL**

### **GENERAL**

The work covered by this section consists of design, supply, fabrication, and installation of new building heating, ventilation and air-conditioning (HVAC) systems. It also includes the delivery to site, erection, setting to work, adjusting, testing, balancing and handing over in perfect operating and running condition all of the HVAC equipment including all necessary associated mechanical works.

### **SPECIALIST SUB-CONTRACTORS QUALIFICATIONS**

The HVAC works shall be executed by an air-conditioning specialist sub-contractor experienced in the design and construction HVAC equipment to include conventional compression systems, heat pump units, space heaters and knowledge in fabricating specialized units consisting of supplemental electric resistance heaters in satisfying the specified indoor design conditions. HVAC equipment will normally consist of split pack heat pump units with supplemental electric heating elements, ducted packaged heat pump units with supplemental duct mounted electric resistance heaters, industrial quality unit heaters, air ventilation systems and specialized industrial ventilation systems. The HVAC heating and cooling load calculations shall be prepared using recognized HVAC load analysis programs such as Trane "Trace" or Carrier "HAP". The heating and cooling load calculations shall take into account the site elevation and ambient design temperatures when determining required HVAC equipment capacities and airflows. The HVAC specialist shall submit the complete HVAC analysis at the 65% design submittal. The HVAC analysis shall clearly state the type of systems to be used and how the system will satisfy the specified indoor design conditions. Provide related psychrometric charts showing the air wet bulb and dry bulb temperatures at each section of the heat/cool unit during both design heating and cooling operation. Provide complete, edited specifications using the UFGS specs for selected HVAC system. The edited specifications shall be submitted along with the 65% design submittal. The specifications shall be coordinated with the manufacturer of the equipment.

### **CODES, STANDARDS AND REGULATIONS**

The equipment, materials and works covered under the heating, ventilation and air-conditioning services shall conform to the referenced standards, codes and regulations where applicable except where otherwise mentioned

under each particular clause.

## DESIGN CONDITIONS

Outside Design Conditions (Contractor shall verify the ambient conditions with available and reliable local weather data).

Gardez area:

Latitude – (approx.) 33.60 deg. North

Longitude – (approx.) 69.22 deg. East

Elevation – (approx.) 2350 M (7710 ft.)

Summer – 29 deg C (84 deg F) Dry Bulb (DB) [& 12.2 deg C (54 deg F)] Wet Bulb (WB)]

Winter – (-10deg C/ 14deg F)

Daily Range – data unknown)

## Indoor Design Condition

Guard tTowers/sSheds	Cooling 25.6 C (78 F)	Heating 20 C (68 F)
----------------------	-----------------------	---------------------

## Noise Level

Noise levels inside occupied spaces generated by HVAC systems indoors shall not exceed **NC 35**

## Internal Loads

- a. Occupancy: Use ASHRAE standards to calculate sensible and latent heat from people. In general, light/moderate office work is 73watts sensible and 45watts latent.
- b. Lighting: 21.5 W/m<sup>2</sup> (2 W/Ft<sup>2</sup>) maximum (however lighting levels shall meet minimum requirements and shall be accounted for in the heating and cooling loads based on the actual lighting design).
- c. Outdoor Air: Outdoor ventilation air shall be provided per ASHRAE Standard 62.1 with the exception of guard towers, guard shacks, and storage facilities. In general this requires 2.5 L/s/Person (5 CFM/Person) and 0.3 L/s per square meter of floor space (0.06 CFM/sqft); outdoor air requirements can be satisfied by opening windows and doors for facilities without a ducted system.
- d. Building Pressurization: 1.3 mm W.G. (0.05 in W.G.); Maintain negative pressure in latrine areas. This is only applicable for buildings provided with central ducted forced air systems

## NEW AIR COOLING & HEATING EQUIPMENT

Environmental control of the facilities shall be achieved by HVAC equipment as listed below and approved by the U.S. Government. Unless otherwise noted, the Contractor may choose any combination of equipment to achieve the inside design conditions specified for the floor plans that is the most Life Cycle Cost Effective to the government. Contractor shall size and select equipment based on equipment manufacturer's performance data at the project site elevation and ensures the equipment's performance meets the design heating and cooling sizing requirements.



Facility Type	Cooling	Heating	Type of HVAC System	Remarks
Guard Tower	25.6C 78 F	20C 68 F	Split pack heat pump	

## ELECTRIC HEATERS

Electric heat trace cable for freeze protection shall not be provided as a substitute for space heating system.

### Unit Heater

Electric resistance unit heaters shall be installed in spaces where only heating is required. Generally, unit heaters shall be mounted as high as possible. Unit heaters shall be of the industrial grade, very durable and securely fastened to the ceiling, wall or structure. Provide a self-contained electric heating unit, suspended from ceiling or structure, fan with at least two-speeds and heating elements. Provide control-circuit terminals and single source of power supply with disconnect. Heating wire element shall be nickel chromium. Include limit controls for overheat protection of heaters. Provide tamper resistant integral thermostat.

### Submittals

The Contractor shall submit the following for the equipment to be provided under this section of the specification: manufacturer's data including performance characteristics at design conditions; manufacturer's certificate stating that each unit will perform to the conditions stated, catalog cuts showing dimensions, performance data, electrical requirements, compliance with standards as stated in paragraph CODES, STANDARDS AND REGULATIONS; complete shop drawings indicating location and installation details.

The manufacturer shall also submit a 2 year warranty for each of the units.

## TEST ON COMPLETION

After completion of the work, the Contractor shall demonstrate to the Contracting Officer that the installation is adjusted and regulated correctly to fulfill the function for which it has been designed. The Contractor shall test, adjust, balance and regulate the section or sections of concern as necessary until the required conditions are obtained. Operational test shall be conducted once during the winter and once during the summer. Coordinate with the Contracting Officer on when the test shall be scheduled. Include tests for all interlocks, safety cutouts and other protective device to ensure correct functioning. All such tests shall be carried out and full records of the values obtained shall be prepared along with the final settings and submitted to the Contracting Officer in writing.

The following tests and readings shall be made by the Contractor in the presence of the Contracting Officer and all results shall be recorded and submitted in a tabulated form.

a. Ambient DB and WB temperatures

b. Room Inside Conditions:

xviii. Inside room DB & WB temperatures

xix. Air flow supply, return and/or exhaust

xx. Plot all temperatures on psychrometric chart

c. Air Handling Equipment: Air quantities shall be obtained by anemometer readings and all necessary adjustments shall be made to obtain the specified quantities of air indicated at each inlet and outlet.

- d. Following readings shall be made:
  - i. Supply, return and outside air CMH (CFM) supplied by each air conditioning system.
  - ii. Total CMH (CFM) exhausted by each exhaust fan
  - iii. Motor speed, fan speed and input ampere reading for each fan
  - iv. Supply, return and outside air temperature for each air-conditioning system.
- e. Electric Motors: For each motor:
  - i. (1) Speed in RPM
  - ii. (2) Amperes for each phase
  - iii. (3) Power input in KW

## **ELECTRICAL REQUIREMENTS FOR HVAC EQUIPMENT**

- a. Note that electrical requirements for all HVAC systems shall be designed and installed to operate on the secondary power standard required herein. The existing power distribution system may require modifications or upgrades to support the additional power required by the HVAC unit. The Contractor is responsible to field verify all the conditions and provide complete shop drawings showing any incidental power upgrades. All electrical work shall comply with the National Electric Code.
- b. All thermostats shall be wall mounted near the return grilles in the room with the highest heat load generation and mounted 1.5 meters (5 feet) above the floor. In lieu of a thermostat, a temperature sensor may be located in the same location or in the return duct and connected to a thermostat located near the unit return. Thermostat shall be mounted 1.5 meters (5 feet) above the finished floor and be easily accessible. Thermostats for the latrine facilities shall be located near the unit return and mounted 1.5 meters (5 feet) above the finished floor. Operation of the control system shall be at the manufacturer's standard voltage for the unit.
- c. The following are the minimum requirements for motors regarding enclosure, insulation and protection:
  - i. Compressor Hermetic: Provide inherent (internal) overload protection.
  - ii. Condenser: Provide internal thermal overload protection.
  - iii. Evaporator (Open Class "A") fan motor type provides internal thermal overload protection.

## **CEILING FANS**

### **Ceiling Fan**

Provide 1320mm blade ceiling fans at one per 40 square meters of floor space. Fans shall have reversible motors. Center or distribute evenly in room. Coordinate placement with the lighting plan to prevent conflict or casting shadows. Fan mount shall be flush, standard, or angle mount depending on ceiling height. Fan shall be mounted such that the fan blade is approximately 2.44 meters above the finished floor. The fan shall be provided without light kit. The finish shall be factory painted white. The controls shall be from either a single pole switch or from two 3 way switches to provide on/off operation. The electrical supply shall be 230volts, single phase, and 50 hertz.

Install per manufacturers' instructions.

## **OPERATIONS AND MAINTENANCE (O&M) FOR MECHANICAL**

- a. Contractor is required to provide a 12 month supply of parts for operation and maintenance of equipment according to the manufacturer's recommendations. In addition to this, the contractors shall provide an inventory of all items, location/address stored and secured, and commissioning plans.
- b. The O&M manuals must be provided prior to any training activities. Manuals shall be "tri-lingual" in Dari, Pashto and English.
- c. All control panels shall have tri-lingual name plates in Dari, Pashto and English.
- d. The contractor shall provide an outline of the training lesson plan (to be approved by the Government) prior to conducting training. CD recordings of training on video shall also be provided, after training is conducted.

## **ELECTRICAL**

### **GENERAL**

Contractor shall design and construct all electrical systems for the facilities to be provided. This includes design, construction, all necessary labor, equipment, and material for a fully functional system.

### **DESIGN CRITERIA**

#### **Applicable Standards**

- a. Design shall be in the required units as stipulated herein.
- b. Conflicts between criteria and/or local standards shall be brought to the attention of the Contracting Officer for resolution. In such instances, all available information shall be furnished to the Contracting Officer for approval.
- c. All electrical systems and equipment shall be installed in accordance with the requirements set forth in the documents referenced herein.
- d. Acceptance Testing: Contractor shall develop and submit for approval complete acceptance test procedures on all systems provided. As a minimum the testing procedures shall comply with the requirements of the National Fire Protection Association (NFPA) and the International Electrical Testing Association Inc. (NETA).

### **MATERIAL**

#### **General**

Unless noted otherwise, all material used shall be in compliance with the requirements of UL standards. In the event that UL compliant materials are not available, Contractor may then select applicable British Standards (BS), IEC, CE, CSA, GS, DIN listed material (or equivalent), but the contractor must prove equivalence and must provide the government with a full copy of the relevant specification(s)/standard(s). Material and equipment installed under

this contract shall be for the appropriate application and installed in accordance with manufacturers recommendations.

Equipment enclosure types shall be in compliance with the National Electrical Manufacturer's Association (NEMA) or the International Electro-Technical Committee (IEC) standards.

Major components of equipment shall have the manufacturer's name, address, type or style, voltage and current rating, and catalog number on a non-corrosive and non-heat sensitive plate, securely attached to the equipment. All equipment delivered and placed in storage, prior to installation, shall be protected from the weather, humidity and temperature variation, dirt and dust, and any other contaminants. All equipment shall be in new condition, undamaged and unused.

## **Standard Product**

All material and equipment shall be a standard product of a manufacturer regularly engaged in the manufacture of the product and shall essentially duplicate items that have been in satisfactory use for at least two (2) years prior to bid opening.

## **Design Conditions**

All equipment shall be rated and designed for the maximum ambient temperature and altitude of the construction site. Equipment that is altitude and temperature sensitive, such as generators, shall be derated according to the manufacturer's recommendations. Generic derating criteria for altitude and for ambient temperature may be used to approximate the required size of such equipment during the design phase, but a stipulation shall be placed on the construction plans to adjust the size according to the derating criteria specific to the manufacturer's equipment chosen before the equipment is ordered.

## **Restrictions**

Aluminum conductors shall not be specified or used except as bare steel reinforced (ACSR) overhead conductors in an aerial primary distribution system. Aluminum windings shall not be used in transformers.

## **DESIGN REQUIREMENTS**

### **Receptacles**

General-purpose receptacles shall be as required herein. All receptacles shall be duplex, unless otherwise specified in this section, the NEC, or other referenced standard.

Receptacles shall be placed at a maximum of 3-meter (10 feet) intervals. Areas with computer work-stations or similar equipment will have additional receptacles. Sinks will have a receptacle above, with one duplex receptacle serving two sinks that are side-by-side. Receptacles in wet/damp areas or within 1 meter (~3 feet) of sinks, lavatories, or wash-down areas shall be ground fault circuit interrupter (GFCI) type or residual current disconnect (RCD) type, with the trip setting of [4 to 6] milliamperes or less. Total number of duplex receptacles shall be limited to six (6) per 20-ampere circuit breaker.

### **Conductors**

All cable and wire conductors shall be copper. Conductor jacket or insulation shall be color coded to satisfy NEC requirements. The use of 75 or 90 degree C (minimum) terminals and insulated conductors is required. Use of higher degree C rated conductors on circuits with protective device terminals rated at a lower degree C is allowed but must be derated to the rating of the device terminals.

### **Grounding and Bonding**

Grounding and bonding shall comply with the requirements of NFPA 70. Underground connections shall be

exothermally welded. All exposed non-current carrying metallic parts of electrical equipment in the electrical system shall be grounded. Insulated grounding conductor (separate from the electrical system neutral conductor) shall be installed in all feeder and branch circuit raceways. Grounding conductor shall be green-colored, unless the local authority requires a different color-coded conductor. Ground rods shall be 20 millimeters (0.75 inches) in diameter and 3 meters (~10 feet) long made of copper-clad steel. Final measurement of the ground resistance shall be in compliance with the requirements of the local authority but shall not exceed 25 ohms when measured more than 48 hours after rainfall.

## **Enclosures**

Enclosures for exterior and interior applications shall be NEMA Type 3S (IEC Classification IP54) and NEMA Type 1 (IEC Classification IP10) respectively.

### **SECTION 01060**

### **SPECIAL CLAUSES**

#### **PART 1 GENERAL**

##### **1.1 PRECONSTRUCTION CONFERENCE**

###### **1.1.1 Schedule of Meeting**

At the earliest practicable time, prior to commencement of the work, the Contractor and any Subcontractors whose presence is necessary or requested, shall meet in conference with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to the details of the administration and execution of this contract. This will include but not necessarily be limited to the Contractor's Quality Control (CQC) Program, the Contractors Accident Prevention Program, submittals, correspondence, schedule, access to the work site, security requirements, interface requirements, temporary facilities and services, hazards and risks, working after normal hours or on weekends or holidays, assignment of inspectors, representations, special requirements, phasing, and other aspects of this project that warrant clarification and understanding.

###### **1.1.2 Meeting Minutes**

It shall be the responsibility of the Contractors CQC System Manager to prepare detailed minutes of this meeting and submit those minutes to the Contracting Officer for approval within three (3) workdays. Any corrections deemed necessary by the Contracting Officer shall be incorporated and resubmitted within two (2) calendar days after receipt. Upon approval of the minutes by the Contracting Officer, the Contractor shall distribute the minutes to all parties present or concerned.

##### **1.2 AREA USE PLAN**

The Contractor shall submit to the Contracting Officer, within ten (10) calendar days after award of this contract, an Area Use Plan designating intended use of all areas within the project boundaries. This plan shall include, but not necessarily be limited to the following: the proposed location and dimensions of any area to be fenced and used by the Contractor; construction plant and building installations/the number of trailers and facilities to be used; avenues of ingress/egress to the fenced areas and details of the fence installation; drawings showing temporary electrical installations; temporary water and sewage disposal installations; material storage areas; hazardous storage areas. Any areas that may have to be graveled shall also be identified. The plan shall also include a narrative description of the building structural system, the site utility system and the office or administration facilities. The Contractor shall also indicate if the use of a supplemental or other staging area is desired. The Contractor shall not begin construction of the mobilization facilities prior to approval by

the Contracting Officer of the Area Use Plan described herein.

### **1.3 CONTRACTOR'S MOBILIZATION AREA**

The Contractor will be permitted to use an area designated by the Contracting Officer within the contract limits for operation of his construction equipment and plants, and offices. Utilities will be provided for the Contractor as described below. The Contractor is responsible for obtaining any required additional mobilization area above that designated. The construction site shall be cleared of construction debris and other materials and the area restored to its final grade.

#### **1.3.2 Protection and Maintenance of Traffic**

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the Host Nation and base authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with base traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

##### **1.3.2.1 Use of Existing Roads as Haul Routes**

The Contractor shall be responsible for coordinating with the base authorities for use of any existing roads as haul routes. Construction, and routing of new haul roads, and/or upgrading of existing roads to carry anticipated construction traffic shall be coordinated with the Base authorities and is the sole responsibility of the Contractor.

##### **1.3.2.2 Employee Parking**

The Contractor's employees may be allowed parking on the military installation. The Contractor is responsible for transporting workers (local nationals) from off post to the worksite, coordinating security identification screening, and cooperating in gate searches with the base authorities. The government reserves the right to terminate any and all contractor parking at any time.

#### **1.3.3 Temporary Project Safety Fencing and Barricades**

The Contractor shall impose all measures necessary to limit public access to hazardous areas and to ensure the restriction of workers to the immediate area of the construction and mobilization site. The Contracting Officer may require in writing that the Contractor remove from the work any employee found to be in violation of this requirement.

##### **1.3.3.1 Barricades**

Barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night. Travel to and from the project site shall be restricted to a route approved by the Contracting Officer.

#### **1.3.4 Host Nation Authorizations, Permits and Licenses**

It shall be the Contractor's responsibility to obtain such local authorizations, permits and licenses necessary to establish his quarry operations, batching operations and haul routes (See Special Clause entitled: COMPLIANCE WITH HOST COUNTRY RULES AND CUSTOMS).

#### **1.4 RESPONSIBILITY FOR PHYSICAL SECURITY**

Prior to mobilization, the Contractor shall submit his proposed means of providing project security to prevent unauthorized access to equipment, facilities, materials and documents, and to safeguard them against sabotage, damage, and theft. The Contractor shall be responsible for physical security of all materials, supplies, and equipment of every description, including property which may be Government-furnished or owned, for all areas occupied jointly by the Contractor and the Government, as well as for all work performed.

#### **1.5 DUST CONTROL**

The Contractor shall be required to control objectionable dust in the work areas, access roadways, and haul roads by means of controlled vehicle speeds or dust palliatives. Vehicles transporting sand, cement, gravel or other materials creating a dust problem shall be covered, as directed by the Contracting Officer, or in accordance with local Laws, codes, and regulations.

#### **1.6 Existing Underground Utilities**

The Contractor shall exercise utmost care in researching locations of existing utilities and reducing damage to existing utilities. Any utilities damaged by the Contractor shall be promptly repaired by the Contractor. The Contracting Officer will review and approve any proposed repairs. Any damage to existing utilities will be immediately reported to the Contracting Officer and the Base Commander.

#### **1.7 CONNECTIONS TO EXISTING UTILITIES**

##### **1.7.1 Not Used**

##### **1.7.1.1 Performance of Work During Non-Standard Hours**

To minimize outage impact to the mission of the installation, all outages shall be scheduled on weekends or from 2100 – 0530 hours on duty days and/or as directed by Contracting Officer Representative (COR). The period proposed for performance of the outage shall include sufficient contingencies to preclude impact to the peak working hours 0530 – 1800 hours during the workweek.

##### **1.7.1.2 Not Used**

##### **1.7.2 Existing Underground Utilities**

The Contractor is provided notice that existing utilities may be present in the construction area. The Contractor shall exercise the utmost care in researching locations of existing utility lines by implementing control measures to eliminate, or reduce to a level acceptable to the Contracting Officer, the chance of damaging or destroying existing utilities.

##### **1.7.2.1 Use of Underground Utility Detecting Device**

Prior to any excavation, a metal and/or cable-detecting device shall be used along the route of the excavation. All underground utilities discovered by this method will be flagged a minimum distance of one-half (1/2) meter on each side of the location.

##### **1.7.2.2 Hand Excavation**

Hand excavation methods and special supervisory care shall be used between any flagged markers, in areas of known or suspected hazards, and in areas known or suspected to have multiple and/or concentrated utility lines or connections.

### **1.7.3 Repair of Damaged Utilities**

The Contractor shall be responsible to repair any utilities damaged by him. The method of repair and schedule for performance of the repair shall be coordinated with, and subject to the approval of, the Contracting Officer. The repair work and any temporary work required to keep the system operational while repairs are being completed, shall be performed at no cost to the Government.

## **1.8 WATER**

The Contractor shall truck in and store his own water for all aspects of construction.

## **1.9 NOT USED**

## **1.10 ELECTRICITY**

Electrical service is not available at the project site. Contractor is responsible for generators to electricity for construction activities.

## **1.11 Not Used**

## **1.12 SCHEDULING OF WORK IN EXISTING FACILITIES**

As soon as practicable, but in any event not later than thirty (30) calendar days after award of this contract, the Contractor shall meet in conference with the Contracting Officer, or his duly authorized representatives, to discuss and develop mutual understanding relative to the scheduling of work in and access to the existing facilities where work has to be performed under this contract, so that the Contractor's proposed construction schedule is coordinated with the operating and security requirements of the installation.

## **1.13 PREPARATION OF AS-BUILT DRAWINGS (CONTRACTOR)**

### **1.13.1 General**

Upon completion of each facility under this contract, the Contractor shall prepare and furnish as-built drawings to the Contracting Officer. The as-built drawings shall be a record of the construction as installed and completed by the Contractor. They shall include all the information shown on the contract set of drawings, and all deviations, modifications, or changes from those drawings, however minor, which were incorporated in the work, including all additional work not appearing on the contract drawings, and all changes which are made after any final inspection of the contract work. In the event the Contractor accomplished additional work that changes the as-built conditions of the facility after submission of the final as-built drawings, the Contractor shall furnish revised and/or additional drawings and drawing files as required depicting final as-built conditions. The requirements for these additional drawings shall be the same as for the as-built drawings specified in this paragraph.

### **1.13.2 Final As-Built Drawings**

The Contractor shall update the digital contract drawing files to reflect the approved final as-built conditions and shall furnish those updated drawing files and plots of the final as-built drawings to the Contracting Officer. *As-built drawings shall include the addition of the predominant native language of the region in addition to the English language.*

a. Only personnel proficient in the use of Computer Assisted Design and Drafting (CADD) for the



preparation of drawings shall be employed to modify the contract drawing files or prepare new drawing files.

b. Existing digital drawing files shall be updated to reflect as-built conditions. Independent drawing files containing only as-built information are not acceptable. The modifications shall be made by additions and deletions to the original drawing files, and where additional drawings are necessary, they shall be developed in individual digital files for each new drawing. All additions and corrections to the contract drawing files shall be clear and legible, and shall match the adjacent existing line work and text in type, size, weight, and style. New or revised information placed into the design files shall be placed on the levels and in the colors used for placement of the corresponding initial data. Similarly, the drawing size, title block, and general format of new drawings shall be consistent with the format established by the original drawings.

c. In the preparation of as-built drawings, the Contractor shall remove "Bubbles" used by the Government to highlight drawing changes made during design/construction. Triangles associated with those earlier drawing changes shall be left on the drawings and the Contractor shall not add triangles to designate modifications associated with representation of the as-built condition. The revision block identification of the drawing modifications shall be left intact and the date of completion and the words "REVISED AS-BUILT" shall be placed in the revision block above the latest existing notation. Each drawing shall have the words "DRAWING OF WORK AS-BUILT" in letters 4.5 mm (3/16") high placed below the drawing title portion of the drawing title block, between the border and the trim line.

d. The Contractor shall check all final as-built drawing files for accuracy, conformance to the initial drawing scheme and the above instructions. The Contracting Officer will review the drawings and drawing files for conformance to these standards.

e. The Contractor shall furnish the digital as-built drawing files in the format as directed within Section 01335. The Government will only accept the final product for full operation, without conversion or reformatting, in these formats.

f. Digital drawing files shall be furnished to the Contracting Officer on CD-ROM or other media and format as approved by the Contracting Officer. A transmittal sheet containing the name of the files, the date of creation, the CD-ROM number, and a short description of the contents, shall accompany the CD-ROM.

g. A sample drawing shall be furnished to the Contracting Officer before delivery of final as-built drawings as a test to demonstrate compliance with the above instructions and file format compatibility with the described CADD software.

h. One (1) complete set of the updated final Record Copy digital drawing files and one (1) paper plot or copy of the final Record drawings shall be delivered to the Contracting Officer upon completion of each facility. If upon review of the final as-built drawings, errors or omissions are found, the drawings and drawing files will be returned to the Contractor for corrections. The Contractor shall complete the corrections and return both the digital files and the as-built prints to the Contracting Officer within ten (10) calendar days.

#### **1.14 CERTIFICATES OF COMPLIANCE**

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in accordance with Section 01335 SUBMITTAL PROCEDURES FOR DESIGN/BUILD. Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company involved and shall contain the name and address of the Contractor, the project name and location, description and the quantity of the items involved, and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from

furnishing satisfactory material.]

## **1.15 ACCIDENT PREVENTION**

The Contractor shall comply with all applicable Host Country laws and with such additional measures as the Contracting Officer may find necessary in accordance with CONTRACT CLAUSE 52.236-13 entitled ACCIDENT PREVENTION (NOV1991)-ALTERNATE 1 (APR 1984). Applicable provisions of the Corps of Engineers manual entitled Safety and Health Requirements Manual EM 385-1-1 will be applied to all work under this contract. The referenced manual may be obtained from the Contracting Officer at the jobsite or from the Afghanistan Engineer District at Kabul, Afghanistan.

### **1.15.1 Accident Prevention Program**

Within fifteen (15) days after award of this contract, and at least ten (10) days prior to the accident prevention pre-work conference, four (4) copies of the Accident Prevention Plan required by the CONTRACT CLAUSE 52.236-13 entitled ACCIDENT PREVENTION (NOV 1991)- ALTERNATE I shall be submitted for review by the Contracting Officer. The Contractor shall not commence physical work at the site until the Accident Prevention Plan (APP) has been reviewed and accepted by the Contracting Officer. The APP shall meet the requirements listed in Appendix "A" of EM385-1-1. The program shall include the following: TAC Form 61 " Accident Prevention Program Hazard Analysis (Activity Hazard Analysis)" fully completed and signed by an executive officer of the company in block No. 13. The Activity Hazard Analysis is a method in which those hazards likely to cause a serious injury or fatality are analyzed for each phase of operations. Corrective action is planned in advance, which will eliminate the hazards. An analysis is required for each new phase of work. On large or complex jobs the first phase may be presented in detail with the submittal of the Accident Prevention Plan rather than presenting the complete analysis. If the plan is to be presented in phases, a proposed outline for future phases must be submitted as a part of the initial Accident Prevention Plan submittal. Accident Prevention Plans will be reviewed for timeliness and adequacy at least monthly with a signature sheet signed and dated documenting that these reviews took place. Copy of company policy statement of Accident Prevention and any other guidance as required by EM 385-1-1, Appendix A.

### **1.15.2 Ground Fault Circuit Interrupter (GFCI) Requirement – Overseas Construction**

The Corps of Engineers Health and Safety Manual, EM 385-1-1, section 11.C.05.a. states: "The GFCI device shall be calibrated to trip within the threshold values of 5 ma +/- 1 ma as specified in Underwriters Laboratory (UL) Standard 943." A variance from USACE has been granted allowing 10 ma, in lieu of 5 ma, for overseas activities that use 220 Volts (V)/50 hertz (Hz) electrical power.

### **1.15.3 Temporary Power - Electrical Distribution Boxes**

EM 385-1-1 section 11.A.01.a. states, "All electrical wiring and equipment shall be a type listed by a nationally recognized testing laboratory for the specific application for which it is to be used." This includes temporary electrical distribution boxes. Locally manufactured electrical boxes will not be allowed. Only manufactured electrical distribution boxes that meet the European CE requirements, with 10 ma CE type GFCIs installed shall be allowed.

Contractors shall:

- a. Make no modifications that might void any CE or manufacturer certification.
- b. Test the installed systems to demonstrate that they operate properly and provide the 10 ma earth leakage protection.
- c. Ensure GFCIs will have an integral push-to-test function. The testing shall be performed on a regular basis.

d. Check that proper grounding is checked regularly and flexible cords, connectors, and sockets inspected before each use.

## **1.16 HAZARDOUS MATERIALS**

Should the Contractor encounter asbestos or other hazardous materials, during the construction period of this contract, he shall immediately stop all work activities in the area where the hazardous material is discovered. The Contractor shall then notify the Contracting Officer; identify the area of danger; and not proceed with work in that area until given approval from the Contracting Officer to continue work activities. Hazardous material is considered to be asbestos, explosive devices, toxic waste, or material hazardous to health and safety. The Contractor shall secure the area from daily traffic until it is safe to resume normal activities.

## **1.17 SPARE PARTS**

### **1.17.1 General**

The requirements of this clause are in addition to any requirements for the provision of specific spare parts to be provided by the Contractor included in Technical Provisions. The Contractor shall furnish spare parts as directed by the Contracting Officer under the provisions of this clause for all equipment for which O&M data is to be provided under Clause OPERATION AND MAINTENANCE (O&M) DATA of this contract. The term "spare parts" as used herein shall include spare parts, special tools and test equipment.

### **1.17.2 Selection of Spare Parts to be Furnished**

The Contractor shall provide master parts lists, recommended spare parts lists and lists of special tools and test equipment as a part of the equipment O&M data required by Clause OPERATION AND MAINTENANCE (O&M) DATA. The master parts list shall include the supplier's price for each part. After review of the lists, the Contracting Officer will select spare parts and furnish written direction to the Contractor indicating quantities and types of spare parts to be furnished by the Contractor. Written directions for spare parts orders may be provided on an incremental basis as reviews of O&M data submitted by the Contractor are completed but will not necessarily be issued in the sequence in which the Contractor submitted the equipment O&M data.

### **1.17.3 Procurement and Delivery of Spare Parts**

The Contractor shall procure and be responsible for delivery, receipt, handling, placing in storage, inventory, and turnover to the Contracting Officer all spare parts selected by the Contracting Officer. In addition to the recommended spare parts list required in paragraph SELECTION OF SPARE PARTS TO BE FURNISHED above, the Contractor is responsible to have one (1) year supply of manufacturer's recommended spare parts on site ready to turn over to the Contracting Officer at the time of acceptance of the facility.

#### **1.17.3.1 Shipment and Delivery**

The Contractor shall be responsible for the shipment and delivery of spare parts to the location on or near the site in Afghanistan as selected by the Contracting Officer. The Contractor shall provide all manpower and equipment required to receive and place into designated storage areas all spare parts purchased under this clause. The Contractor shall give the Contracting Officer thirty (30) calendar days notice of arrival at the site of the first shipment.

#### **1.17.3.2 Turnover of Spare Parts**

The Contractor shall notify the Contracting Officer seventy-two (72) hours prior to delivery of spare parts to the designated storage area. The Contractor and the Contracting Officer will perform a joint

inventory of the spare parts and the spare parts will be turned over to the Contracting Officer. Spare parts purchased under this clause shall not be used by the Contractor.

#### **1.17.3.3 Parts and Package Identification**

Prior to shipment from point of purchase, each spare part shall be tagged or otherwise marked or labeled. Such labeling may be placed or affixed to the container, box or packaging in which spare parts are located when it is not feasible to place or affix such labeling directly on each spare part. Tags or labels shall include, but not necessarily be limited to; part number, description, parent equipment name and number location, project and/or other data as directed by the Contracting Officer.

#### **1.17.3.4 Preservation and Packaging Instruction**

a. Items ordered under this contract shall be preserved and packed for a minimum of three (3) years shelf life storage. All items shall be individually packaged except when the manufacturer specifies that the items are to be used in sets. Appropriate identification labels must be affixed to the items protective box or package. After the spare parts are packaged, the manufacturer shall weigh the spare parts and packaging and place the weight and size of the packaged container on the label with other information as outlined herein. Each item, not normally identified with manufacturer's name and part number, shall have an appropriate label affixed to it with manufacturer's name and part number.

b. Machined spare parts shall be lubricated or coated in order to withstand extensive periods of storage in a highly corrosive atmosphere.

c. Large items (greater than 22.7 kg (50 lbs.), or larger than 0.03 CM (one cubic foot) shall be packaged in waterproof wooden boxes and properly braced. Cushioning shall be used to prevent damage to the item and to the packaging material.

d. Solid state components, such as diodes, transistors, integrated circuits or equipment consisting of such parts that can be damaged as a result of static electricity and other stray electro-magnetic fields shall be packaged in heat-sealed, aluminum foil, laminated, flexible packages.

e. All other spare parts shall be packaged in heat sealed plastic bags or wrap. Delicate and more fragile items such as test equipment shall be cushioned or wrapped with transparent bubble wrap material prior to being inserted into the plastic package.

#### **1.17.4 Warranty**

All spare parts provided by the Contractor under this clause are subject to the general warranty clauses of this contract.

#### **1.17.5 Payments for Spare Parts**

Payments for spare parts ordered under the paragraph entitled "Selection of Spare Parts To Be Furnished" will be made under the work item of the Work Breakdown Sheet entitled "Spare Parts". Payments for spare parts specifically required elsewhere in this contract shall be considered as part of those equipment costs and shall be included in other payment items as appropriate. Payments for spare parts ordered under this clause shall be based on the invoice price (FOB supplier) plus certified invoice price of surface shipment to the site in Afghanistan. The invoice price (FOB supplier) shall include the separately listed cost for preservation and packaging by the manufacturer as specified herein. The Contractor shall provide invoices and any additional backup, which may be required to demonstrate that the invoices presented represent the cost of spare parts, preservation and packaging, and cost of surface shipment to the site. Payment for handling, delivery, inventory, turnover, customs, overhead or profit shall not be paid or allowed under this Contract Provision, and shall be included in the cost for installation of this equipment under the other appropriate payment items of this contract. Price increases over prices furnished under paragraph SELECTION OF SPARE

PARTS TO BE FURNISHED shall be fully substantiated. Payment for spare parts will be made after the spare parts have been accepted at the site by the Contracting Officer. If the total payments under the work item entitled "Spare Parts" does not reduce the balance of this work item to zero, the remaining balance will be deducted from the final contract amount. If orders exceed the work item entitled "Spare Parts", a modification for equitable adjustment will be issued in accordance with Contract Clause 52.243-4 entitled CHANGES. Payments for spare parts ordered under this clause shall constitute full payment for all cost of the spare parts and associated cost of preservation and packaging, and cost of surface shipment to the site. Other ancillary costs shall be included by the Contractor under the other appropriate work items of this contract and no additional cost except as provided herein will be allowed.

## **1.18 OPERATION AND MAINTENANCE (O&M) DATA**

### **1.18.1 General**

The requirements contained herein are in addition to all shop drawings submission requirements stated in other sections of the specifications. The Contractor shall include the provisions for all items required under this clause in all purchase orders and sub-contract agreements. Submittals required hereinafter will not relieve the Contractor of any responsibilities under the Warranty of Construction Provisions of this contract or under the various Guarantee Clauses of the Technical Provisions.

### **1.18.2 Submittals**

The Contractor shall submit all items requiring submission of O&M data under this and other sections of these specifications in accordance with Section 01335 SUBMITTAL PROCEDURES FOR DESIGN/BUILD of the specifications.

### **1.18.3 Operation and Maintenance (O&M) Data**

The Contractor shall furnish operation and maintenance manuals for all facilities constructed under this contract. The manuals shall be loose leaf, indexed and shall consist of manufacturer's brochures, manufacturer's operation and maintenance manuals, service and repair manuals, catalogs, service bulletins, instruction charts, diagrams, other information as necessary to support the operation and maintenance of the end items of equipment, assemblies and systems. Each type of facility (housing, barracks, mosque, etc.) shall be covered by a separate manual (or manuals) consisting of all data pertaining to the equipment and/or systems within that facility. Identical equipment within a single major system shall require only one submittal of data. The Contractor shall furnish all O&M manuals to the Contracting Officer not less than thirty (30) calendar days prior to contract completion. Required number of submittals (number of sets) shall be as specified in Section 01335 SUBMITTAL PROCEDURES FOR DESIGN/BUILD.

### **1.18.4 Recommended Spare Parts List**

The Contractor shall furnish a recommended spare parts list containing equipment manufacturers' recommendations for five (5) years; two (2) years and one (1) year spare parts stock levels in Afghanistan. Current unit price and effective date, lead time, shelf life for each individual part, and total cost of all recommended parts shall be furnished.

### **1.18.5 Supplemental Submittals of Data**

After initial submittal of O&M manuals and until final acceptance of all equipment, the Contractor shall prepare and deliver to the Contracting Officer supplemental technical data as previously described for all changes, modifications, revisions and substitutions to equipment and components. For equipment or systems introduced into the contract under change order, or modified by change order, supplemental data shall be furnished within forty-five (45) calendar days after issuance of the change order. The supplemental data furnished shall be properly prepared and identified for insertion into the O&M manuals.

#### **1.18.6 Framed Instructions for Systems**

Approved wiring and control diagrams showing the complete layout of the entire system, including equipment, piping, valves and control sequence, framed under glass or in approved laminated plastic, shall be posted, where applicable, in all mechanical equipment rooms. In addition, detailed operating instructions explaining safe starting and stopping procedures for all systems shall be prepared in typed form along with the inspections required to insure normal safe operations. The instructions shall be framed as specified above for the wiring and control diagrams and posted beside the diagram. Proposed diagrams, instructions, and other sheets shall be submitted for approval prior to posting. Operating instructions shall be posted before acceptance testing of the systems and verified during acceptance testing.

#### **1.18.7 Additional Submittals/Re-submittals**

The Contracting Officer reserves the right to determine whether the above specified information, as furnished by the Contractor, is adequate and complete and to require such additional submittals by the Contractor as necessary to insure that adequate information has been furnished to provide the satisfactory operation and maintenance of the various items of equipment and to fulfill the intent of the specifications. Additional submittals or resubmittals supplementing incorrect or incomplete data shall be made within thirty (30) calendar days after receiving notice by the Contracting Officer. All costs arising from these resubmissions shall be borne by the Contractor.

### **1.19 SPECIAL FACILITIES & SERVICES TO BE FURNISHED BY THE CONTRACTOR**

The Contractor shall furnish the facilities and services listed in this clause for Corps of Engineers personnel and other persons as designated by the Contracting Officer. All facilities, furnishings, materials, and equipment shall be new when furnished at the site. The Contractor shall fully maintain and repair all facilities, furnishings and equipment listed below. All facilities, furnishings, materials, and equipment furnished and/or installed by the Contractor under this clause shall remain the property of the Contractor at the completion of the contract. Facility structures shall be modular or containerized, suitable for easy movement at a later date.

#### **1.19.1 Field Office Facility**

Field office facility sufficient for two (2) persons shall include all utilities, indoor toilet facilities, small conference area, and break area with sink. The field office facility can be co-located with the contractor's field office if the Field Office Facility is provided with a locked entrance door. The layout of the office facility shall be approved by the Contracting Officer. The facility, including electrical diagrams, shall be provided no later than 15 days after award of this contract.

Office furnishings shall include:

- [2] - Desks
- [2] - Desk chairs
- [1] - Conference table for 4 with chairs
- [2] - 4 shelf storage units
- [2] - 4 drawer file cabinets

#### **1.19.2 Services for the Office Facilities**

- a. Maintain all utility systems required to support the facilities. Provide heat and air conditioning to the facilities.
- b. Provide operation and maintenance of building structure, all furnishings and equipment contained therein, including painting and incidental repairs.
- c. Provide dust control in area adjacent of the buildings.
- d. Provide vector control services, including insect and rodent control in the areas adjacent to the

buildings.

## **1.20 INSTRUCTIONS AND TRAINING FOR OPERATION AND MAINTENANCE**

### **1.20.1 General**

The Contractor shall be responsible for the instruction and training of operating and maintenance personnel as specified below and in the Technical Provisions of the specifications. Unless otherwise indicated in the Technical Provisions, operating and maintenance instructions shall be given for a minimum period as follows:

Title	Duration of Training
Mechanical Systems	10 Days
Electrical Systems	10 Days

### **1.20.2 Operation and Maintenance Training**

The Contractor shall provide competent instructors for training of personnel designated by the Contracting Officer to operate mechanical and electrical building systems and equipment, perform the required preventive maintenance to minimize breakdown, and to perform necessary repairs when malfunction or breakdown of equipment occurs. Such training shall consist of classroom and on-the-equipment training for the period specified, which shall be completed prior to acceptance of a system or equipment, as applicable. The instructor(s) shall have no other duties during the period of training. Classroom instruction shall not exceed fifty percent (50%) of the total training time, with the balance devoted to on-the-equipment demonstration and familiarization. Emphasis will be given to both electrical and mechanical features, in accordance with approved training plans.

### **1.20.3 Arrangements**

The training shall be for not less than the periods of time specified, five (5) days per week, and eight (8) hours per day, subject to review and approval by the Contracting Officer. Each individual training session shall be presented one time only, shall be video taped in a television system compatible with the local area, and be scheduled in a manner acceptable to the Contracting Officer. At the completion of training, the videotapes shall become the property of the Government. In addition to the Contractor's requirements to video tape each training section, the Government reserves the right to record, in any manner, the subject training material, or training sessions given by the Contractor, without additional cost to the Government.

Recordings obtained will be used in future training by the Government. The operating and maintenance manual data, as specified to be furnished in these Special Clauses, shall be used as the base material for training.

### **1.20.4 Scheduling**

The Contractor shall contact the Contracting Officer for the purpose of preliminary planning, scheduling, and coordination of training, to maximize effectiveness of the training program for available operating and maintenance personnel. The Contractor shall initiate and make arrangements for such contact within thirty (30) calendar days after receipt of notification of award of contract; and shall include all significant times in scheduling and completing training in his PROJECT SCHEDULE. The Contractor shall provide a draft outline of training outline in sufficient detail to provide a broad indication of the type of scope of training to be given. It shall include but not be limited to; (a) a list of subjects to be presented; (b) estimated amounts of classroom and on-the-equipment instruction for each subject; (c) a list of minimum qualifications for instructors; and (d) discussions concerning the types and amounts of visual aids, reference materials, tools and test equipment, mock-up and other training materials that will be employed during training.

### **1.20.5 Preliminary Plan**

The Contractor shall submit seven (7) copies of an outline of his proposed training plan to the Contracting Officer for review and approval not later than 60 calendar days after award of this contract. The plan will be reviewed and coordinated with the content of the O&M manuals.

#### **1.20.6 Plan**

The Contractor shall submit seven (7) copies of his proposed training plan to the Contracting Officer for approval not later than ninety (90) calendar days prior to start of any training. The plan shall include the following; (a) a weekly outline showing overall form and design of training presentation; (b) a day-by-day schedule showing time intervals, the major and subordinate subjects to be covered in each, the name of the instructor(s) and qualification summary of each, and identification of related handouts; (c) summary of the number of hours of classroom and on-the-equipment training; (d) a list of reference materials to be provided by the Contractor to the trainees; and (e) a list and description of the training materials to be used, such as text, visual aids, mock-up, tools, etc. The Contractor shall be responsible for furnishing all training materials except the following: The Government will provide space, chairs, and tables for classroom training, and three (3) sets of the five (5) sets of O&M Manuals required by the Contractor per Section 01335 SUBMITTAL PROCEDURES FOR DESIGN/BUILD of the specifications. Provision of these manuals is solely for reference purposes, and in no way relieves the Contractor from providing all instruction and materials necessary for training personnel designated by the Government. All costs for resubmission of training plans, training materials, etc., as requested by the Contracting Officer shall be borne by the Contractor. Resubmittals shall be made within twenty (20) days of notice from the Contracting Officer.

#### **1.20.7 Attendance Roster / TAC Form 356**

The Contractor shall develop an attendance roster or a similar document indicating each student's attendance, prior to the start of each class, subject and/or topic. This includes both "Hands-On" and classroom training. It is strongly recommended that each student trained be required to sign this document at the beginning of each class day for each and every class, subject and/or topic taught on that day. The Contractor's failure to have student attendance verified in writing may be cause for the Government to order the Contractor to repeat schooling where evidence of attendance cannot be verified. No part of the time lost due to such repeat instruction shall be made the subject of claim for extension of time or for excess costs or damage by the Contractor. Within ten (10) working days after completion of Operation and Maintenance Training conducted in accordance with this clause and/or applicable Technical Provision section, the Contractor shall complete and submit TAC Form 356 "Operation and Maintenance Training Validation Certificate". The attendance roster shall be included as an attachment to TAC Form 356.

#### **1.21 CONTRACTOR FURNISHED EQUIPMENT LISTS**

The Contractor shall furnish a list of all items, other than integral construction type items, furnished under the contract. Items such as furniture, drapes, rugs, vehicles, office machines, appliances, etc., shall fall under this category. The Contractor's list shall describe the item; give the unit price and total quantities of each. Model and serial numbers for equipment shall be provided when applicable. The Contractor shall keep an up-to-date register of all covered items and make this information available to the Contracting Officer at all times. Prior to acceptance, the Contractor shall submit the complete register to the Contracting Officer.

#### **1.22 TIME EXTENSIONS**

##### **1.22.1 General**

This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the Contract Clause 52.249-10 entitled DEFAULT (FIXED-PRICE CONSTRUCTION) APR 1984. The listing below defines the anticipated monthly unusually severe



weather for the contract period and is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the geographic location of the project. The schedule of anticipated unusually severe weather will constitute the baseline for determining monthly weather time evaluations. Upon award of this contract and continuing throughout the contract each month, actual unusually severe weather days will be recorded on a calendar day basis (including weekends and holidays) and compared to the monthly anticipated unusually severe weather in the schedule below. The term "actual unusually severe weather days" shall include days actually impacted by unusually severe weather. The Contractor's schedule must reflect the anticipated unusually severe weather days on all weather dependent activities.

#### MONTHLY ANTICIPATED UNUSUALLY SEVERE WEATHER CALENDAR DAYS

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
22	19	13	2	1	0	0	0	0	5	17	21

Total = 100 days

### 1.22.2 Time Extensions

#### 1.22.2.1 Weather

The number of actual unusually severe weather days shall be calculated chronologically from the first to the last day in each month. Unusually severe weather days must prevent work for fifty percent (50%) or more of the Contractor's workday and delay work critical to the timely completion of the project. If the number of actual unusually severe weather days exceeds the number of days anticipated in the paragraph above, the Contracting Officer will determine whether the Contractor is entitled to a time extension. The Contracting Officer will convert any qualifying delays to calendar days and issue a modification in accordance with the Contract Clause 52.249-10 entitled DEFAULT (FIXED-PRICE CONSTRUCTION) APR 1984.

#### 1.22.2.2 Other Delays

Construction delays due to full or partial base closures due to incidents such as demonstrations, civil unrest and outright attacks will be examined on an individual basis for consideration of time extensions.

### 1.23 STANDARDIZATION

Where two or more items of the same type or class of product, system or equipment furnished in this project are required, the units shall be products of the same manufacturer and shall be interchangeable when of the same size, capacity, performance characteristics, and rating. The only exception to this requirement is where the items are interchangeable due to conformance with industry standards (valves, fittings, etc.); they need not be by the same manufacturer. This requirement applies to all manufactured items in the project that normally require repair or replacement during the life of the equipment.

### 1.24 COMPLIANCE WITH HOST COUNTRY RULES AND CUSTOMS

The laws of Host Country may prohibit access to certain areas of the country that are under military control. The Contractor shall furnish the Contracting Officer the names of personnel, type, and amounts of equipment, dates and length of time required at the site, and the purpose of entering the host country. It is understood that areas to which rights of entry are provided by the Host Government are to be used only for work carried out under the contract and no destruction or damages shall be caused, except through normal usage, without concurrence of the Host Government.

#### **1.24.1 Contractor's Responsibilities**

The following items are the sole responsibility of the Contractor to investigate, estimate as to cost, and assume the risk, as normally encountered by Contractors. The Contractor shall be responsible for determining the effect of the following on his own cost of performance of the contract and for including sufficient amount in the contract price:

- a. Official language and type of accounts required to satisfy the officials of the Local Government.
- b. Entry and exit visas, residence permits, and residence laws applicable to aliens. This includes any special requirements of the Host Government, including those required by local Labor Offices, which the Contractor may have to fulfill before an application for a regular block of visas will be accepted.
- c. Passports, health and immunization certificates, and quarantine clearance.
- d. Compliance with local labor and insurance laws, including payment of employer's share of contribution, collecting balance from employee and paying into insurance funds.
- e. Strikes, demonstrations and work stoppage.
- f. Collection through withholding and payment to local Government, of any Host Country income tax on employees subject to tax.
- g. Arranging to perform work in the Host Country, to import personnel, to employ non-indigenous labor, to receive payments and to remove such funds from the country.
- h. Operating under local laws, practices, customs and controls, and with local unions, in connection with hiring and firing, mandatory wage scales, vacation pay, severance pay, overtime, holiday pay, 7th day of rest, legal notice or pay in lieu thereof for dismissal of employees, slowdown and curtailed schedules during religious holidays and ratio of local labor employed in comparison to others.
- i. Possibility of claims in local bureaus, litigation in local courts, or attachment of local bank accounts.
- j. Compliance with workmen's compensation laws and contributions into funds. Provisions of necessary medical service for Contractor employees.
- k. Special license required by the local Government for setting up and operating any manufacturing plant in the Host Country, e.g. concrete batching, precast concrete, concrete blocks, etc.
- l. Sales within the host country of Contractor-owned materials, and equipment.
- m. Special licenses for physicians, mechanics, tradesmen, drivers, etc.
- n. Identification and/or registration with local police of imported personnel.
- o. Stamp tax on documents, payments and payrolls.
- p. Base passes for permanent staff, day laborers, motor vehicles, etc.
- q. Compliance with all customs and import rules, regulations and restrictions, including, but not limited to, local purchase requirements.

#### **1.25 IDENTIFICATION OF EMPLOYEE'S PERSONNEL AND VEHICULAR ACCESS TO THE PROJECT SITES**

The installation security authority maintains the ultimate authority for establishing, monitoring, and enforcing security requirements for the installation security office. All contractor, subcontractor, or vendor personnel and vehicles at any tier working at any location on the installation are subject to a thorough search upon entering, departing, or at any time deemed necessary by the installation security personnel. The Contractor shall be responsible for compliance with all installation security requirements. The Government reserves the right to deny access or to require the contractor to remove any personnel or equipment deemed to be a threat to the security of the installation security office or the installation personnel. The Contractor shall coordinate with the Contracting Officer to ensure that the installation security regulations are followed.

#### **1.25.1 Employee Identification**

The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work, to display identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.

##### **1.25.1.1 Preparation of Identification Badges**

The Contractor shall be required to prepare a written application inclusive color photographs and provide all materials and labor necessary to prepare an identification badge, laminated in plastic, containing the employee's name, badge number, color photo, height and weight, the name of the Contractor's organization and for requiring each employee engaged on the work to display this identification as directed by the Contracting Officer. The Contractor shall submit each application and draft badge through the Contracting Officer to the Base Security Office. A minimum of thirty-five workdays shall be allowed for Government review and certification of badges. The Base Security Office will certify each draft badge by signature, stamp, seal or any combination thereof. Upon certification by the Base Security Office, the badges will be returned to the Contractor for final preparation, lamination, and issuance. Badges shall not be taken out of country during periods of travel or absence. During such periods, the Contractor may be permitted to issue temporary identification badges.

##### **1.25.1.2 Employee Background and Historical Information**

The Contractor shall be required to prepare and maintain personal background and historical information forms on each employee. These forms may be reviewed by the Base Security Office. The required information shall include but not necessarily be limited to the following:

- a. Full name.
- b. Place and date of birth.
- c. Three (3) current color photographs.
- d. Copy of Citizenship/Nationality identification.
- e. Copy of Passport.
- f. Copy of drivers license.
- g. Police Background Check.
- h. Work History.
- i. Personal background information.
- j. Copy of Work Permit and/or Visa.
- k. Permanent home of record and in-country address.
- l. Other information mandated by local law, the Base Security Regulations or that may be required to coordinate and process the necessary documentation with the government offices responsible for the approval.
- n. Registration, insurance company, policy number and expiration date for each vehicle.

### **1.25.2 Identification of Contractor Vehicles**

The Contractor shall be responsible for requiring each vehicle engaged in the work to display permanent vehicular identification as approved and directed by the Contracting Officer. If acceptable to the Base Security Office and approved by the Contracting Officer, the Contractor may institute a system of non-permanent temporary identification for one-time delivery and transit vehicles. Each Contractor vehicle, machine, piece of equipment, or towed trailers, shall show the Contractor's name such that it is clearly visible on both front doors of the vehicle and both sides of a towed trailer. A valid license plate shall be displayed at all times. Contractor vehicles operated on Government property shall be maintained in a good state of repair, shall be insured, and shall be registered in accordance with Afghan Law.

### **1.25.3 Security Plan**

The Contractor shall submit to the Contracting Officer, within ten (10) calendar days after award of this contract, his proposed personnel and vehicular access plan. This plan shall cover all elements for issuance of the access passes, safeguarding of passes not issued, construction security operations, lost passes, temporary vehicle passes, and collection of passes for employee's and vehicles on 1)- temporary absence; 2)- termination or release; and 3)- termination or completion of contract. The plan shall address in detail the contractors proposed procedures, and organization necessary to produce and maintain effective security within the contract limits twenty-four (24) hours a day seven (7) days a week.

### **1.26 RADIO TRANSMITTER RESTRICTIONS**

To preclude accidental actuation of sensitive electronic equipment, the Contractor shall not use radio-transmitting equipment without prior approval of the Contracting Officer.

### **1.27 ON-BASE PHOTOGRAPHY PROHIBITION**

The Contractor shall not engage in any form of photography without prior written approval from the Contracting Officer.

### **1.28 PUBLIC RELEASE OF INFORMATION**

#### **1.28.1 Prohibition**

There shall be no public release of information or photographs concerning any aspect of the materials or services relating to this bid, contract, purchase order, or other documents resulting there from without the prior written approval of the Contracting Officer.

#### **1.28.2 Subcontract and Purchase Orders**

The Contractor agrees to insert the substance of this clause in all purchase orders and subcontract agreements issued under this contract.

### **1.29 ATTACHMENTS**

TAC FORM 61 - Accident Prevention Program Hazard Analysis

TAC FORM 356 - Operation and Maintenance Training Validation Certificate

## **PART 2 LOCAL CLAUSES**

### **2.1 APPLICATION OF US CRIMINAL JURISDICTION**

Reference DODI 5525.11. The contractor is directed to provide all of its personnel working under this contract, and to require all of its subcontractors to provide their personnel, with written notification that - with the exception of nationals of Afghanistan and those ordinarily resident in Afghanistan - contractor and subcontractor personnel, and the dependents of contractor and subcontractor personnel who are residing with such personnel, may be subject to US criminal jurisdiction as provided for in the Military Extraterritorial Jurisdiction Act, 18 USC 3261-3267; see Section 3267(1)(A)(iii)(I) and (2)(A)(iii). A copy of the notice ***shall be furnished to the contracting officer upon award of the contract***, along with a certification by an authorized company representative attesting to the provision of the notification to contractor personnel.

## **2.2 ATTACKS FROM HOSTILE ENTITIES**

This contract is firm fixed-price. Costs incurred in the performance of project execution that arise from the attacks of hostile entities, such as costs arising from damage to or destruction of contractor equipment and facilities, and damage to or destruction of the project prior to Government acceptance, are the sole responsibility of the contractor. The Government makes no guarantee to provide the contractor with security, and bears no obligation to reimburse the contractor for costs arising from the attacks of hostile entities. When appropriate, the Contracting Officer may provide the contractor with an equitable adjustment with respect to time – but not cost – in accordance with clause 52.249-10; see 52.249-10(b)(1)(i) and (2).

## **2.3 INSTALLATION ACCESS AND BADGING**

This contract is firm fixed-price. It is the responsibility of the contractor to be knowledgeable of and to abide by any and all applicable installation access procedures and requirements, to include any and all badging procedures and requirements, that may be necessary for contractor access to the project site. Such procedures and requirements may change over the course of contract performance; it is the responsibility of the contractor to plan accordingly in order to meet its existing obligations under this contract. The US Army Corps of Engineers, Afghanistan Engineer District, neither controls nor is responsible for any such installation access procedures, requirements or changes thereto.

## **2.4 CUSTOMS CLEARANCE**

Reference clauses 52.229-6 and 52.225-13. This contract is firm fixed-price. It is the responsibility of the contractor to be knowledgeable of and to abide by any and all applicable customs clearance procedures and requirements that may be necessary for the transportation of supplies and equipment into Afghanistan. Such procedures and requirements may change over the course of contract performance; it is the responsibility of the contractor to plan accordingly in order to meet its existing obligations under this contract. The US Army Corps of Engineers, Afghanistan Engineer District, neither controls nor is responsible for any such customs clearance procedures, requirements or changes thereto.

## **2.5 TRAVEL WARNINGS**

The contractor shall provide all personnel working under this contract, and shall require subcontractors to provide their personnel, with a written notification advising such personnel to be aware of US State Department Travel Warnings with respect to Afghanistan, available at <http://travel.state.gov>, in the event they wish to consider bringing their dependants into Afghanistan. A copy of the notice ***shall be furnished to the contracting officer upon award of the contract***, along with a certification by an authorized company representative attesting to the provision of the notification to contractor personnel. At no time, subject to the written approval of the contracting officer, may the contractor allow such dependants, or any other unauthorized individuals, to be present on the project site grounds, whether in transit or otherwise.

## **2.6 DRUG-FREE WORKFORCE**

Documentation of the contractor's drug-free workforce program as required by clause 252.223-7004(b) ***shall be furnished to the contracting officer upon award of the contract.***

## **2.7 COMBATING TRAFFICKING IN PERSONS, COMMERCIAL SEX ACTS, FORCED LABOR**

A copy of the employee notification statement as required by clause 252.222-7006(d) ***shall be furnished to the contracting officer upon award of the contract,*** along with a certification by an authorized company representative attesting to the provision of the notification to contractor personnel.

-- End of Section --

## **SECTION 01312**

### **QUALITY CONTROL SYSTEM (QCS)**

#### **PART 1: GENERAL**

##### **1.1 GENERAL**

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. The Contractor module, user manuals, updates, and training information can be downloaded from the RMS web site: the Contractor can obtain the current address from the Government. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

- Administration
- Finances
- Quality Control

- Submittal Monitoring
- Scheduling
- Import/Export of Data

### **1.1.1 Correspondence and Electronic Communications**

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

### **1.1.2 Other Factors**

Particular attention is directed to specifications "SUBMITTAL PROCEDURES", "CONTRACTOR QUALITY CONTROL", "PROJECT SCHEDULE", and Contract Clause, "Payments", which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

## **1.2 QCS SOFTWARE**

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become available. It shall be the responsibility of the contractor to maintain the QCS software and install updates as they become available.

## **1.3 SYSTEM REQUIREMENTS**

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run QCS. No separate payment shall be made for updating or maintaining the necessary hardware configurations necessary to run QCS:

### **1.3.1 Hardware**

IBM-compatible PC with 1000 MHz Pentium or higher processor  
256+ MB RAM for workstation / 512+ MB RAM for server  
1 GB hard drive disk space for sole use by the QCS system  
Digital Video Disk (DVD)-Compact Disk (CD) Reader-Writer (RW/ROM)  
Monitor with a resolution of AT LEAST 1024x768, 16bit colors  
Mouse or other pointing device  
Windows compatible printer. (Laser printer must have 4 MB+ of RAM)  
Connection to the Internet, minimum 56k BPS

### **1.3.2 Software**

MS Windows 2000 or higher  
QAS-Word Processing software: MS Word 2000 or newer  
Internet browser supporting HTML 4.0 or higher  
Electronic mail (E-mail) MAPI compatible  
Virus protection software regularly upgraded with all issued manufacturer's updates

## **1.4 RELATED INFORMATION**

### **1.4.1 QCS User Guide**



After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website; the Contractor can obtain the current address from the Government. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

#### **1.4.2 Contractor Quality Control (CQC) Training**

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class. The government will provide QCS training if requested by the contractor.

### **1.5 CONTRACT DATABASE**

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by files attached to E-mail or via CD-ROM. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

#### **1.6 DATABASE MAINTENANCE**

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. Data updates to the Government shall be submitted via either E-mail or electronic media with printed/file attachments, e.g., daily reports, schedule updates, payment requests. If permitted by the Contracting Officer. The QCS database typically shall include current data on the following items:

##### **1.6.1 Administration**

###### **1.6.1.1 Contractor Information**

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver Contractor administrative data in electronic format via E-mail.

###### **1.6.1.2 Subcontractor Information**

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format via E-mail.

###### **1.6.1.3 Correspondence**

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

###### **1.6.1.4 Equipment**

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

###### **1.6.1.5 Management Reporting**

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

## **1.6.2 Finances**

### **1.6.2.1 Pay Activity Data**

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

### **1.6.2.2 Payment Requests**

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

## **1.6.3 Quality Control (QC)**

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report.

### **1.6.3.1 Daily Contractor Quality Control (CQC) Reports.**

QCS includes the means to produce the Daily CQC Report. The Daily CQC Report generated by QCS shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the QCS-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by specification 01451 "CONTRACTOR QUALITY CONTROL".

### **1.6.3.2 Deficiency Tracking.**

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The Contractor shall maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

### **1.6.3.3 Three-Phase Control Meetings**

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

### **1.6.3.4 Accident/Safety Tracking.**

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are

observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports.

#### **1.6.3.5 Features of Work**

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

#### **1.6.3.6 QC Requirements**

The Contractor shall develop and maintain a complete list of QC testing, transferred and installed property, and user training requirements in QCS. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via QCS.

### **1.6.4 Submittal Management**

The Contractor shall maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using QCS. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

### **1.6.5 Schedule**

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Specification Section Project Schedule. This schedule shall be input and maintained in the QCS database either manually or by using the Standard Data Exchange Format (SDEF). The updated schedule data shall be included with each pay request submitted by the Contractor.

### **1.6.6 Requests for Information (RFI)**

The Contractor shall use the two-way RFI system contained in QCS for tracking all RFI's generated during the contract. Hard copies of all RFI's shall be provided to the government, and will govern in the event of a discrepancy between electronic and printed mediums.

### **1.6.7 Import/Export of Data**

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data, and schedule data using SDEF.

## **1.7 IMPLEMENTATION**

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

## **1.8 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM**

The Government-preferred method for Contractor's submission of updates, payment requests,

correspondence and other data is by E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of computer diskettes or CD-ROM for data transfer. Data on the disks or CDs shall be exported using the QCS built-in export function.

#### **1.9 MONTHLY COORDINATION MEETING**

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the Contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

#### **1.10 NOTIFICATION OF NONCOMPLIANCE**

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

-- End of Section --

## **SECTION 01321**

### **PROJECT SCHEDULE**

#### **1.0 GENERAL**

##### **1.1 SUBMITTALS**

The following shall be submitted for Government approval in accordance with Section 01335 SUBMITTAL PROCEDURES: SD-07 Schedules Project Schedule; Horizontal Bar Chart and Periodic Payment Request Updates; and Projected Earnings Curve and Periodic Payment Request Updates. Revisions to the Project Schedule and Projected Earnings Curve for Modifications Issued to this Contract shall be coordinated with the Contracting Officer.

##### **2.0 PRODUCTS (Not Applicable)**

#### **3.0 EXECUTION**

##### **3.1 GENERAL**

The Contractor shall furnish a Project Schedule as described below. The scheduling of construction shall be the responsibility of the Contractor. Contractor management personnel shall actively participate in its development. Subcontractors and suppliers working on the project should also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

##### **3.2 BASIS FOR PAYMENT**

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel shall result in an inability of the Contracting Officer to evaluate Contractor progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer and those revisions have not been included in the Project Schedule, then the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

##### **3.3 PROJECT SCHEDULE**

###### **3.3.1 Schedule of Construction**

Within seven (7) calendar days after notice to proceed, the Contractor shall prepare and submit a Construction Schedule to the Contracting Officer for approval. This schedule shall address each payment line item and/or sub-line item listed in the Proposal Schedule separately.

###### **3.3.2 Non-Compliance**

Failure of the Contractor to comply with the requirements of the Contracting Officer shall be grounds for determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

### **3.3.3 Horizontal Bar Chart**

#### **3.3.3a Format**

The required schedule shall be a cost loaded CPM network prepared using Primavera P3 or P6, or Microsoft Project 2007. It shall be displayed as a horizontal bar chart. Activity IDs and descriptions shall be listed down the left side of the page. The timescale shall run across the top of the page. Each activity shall be shown as a bar from the early start to the early finish. No page header shall be used. The page footer will contain the name of the contractor, the name of the project and the solicitation number. The schedule shall be organized using activity codes (Primavera) or custom outline codes (MS Project). The activity code dictionary must include a code field for Bid Item with code values corresponding to the line items on the Proposal Schedule. The drag-and-drop and indent features shall not be used to organize a schedule created with MS Project.

#### **3.3.3b Calendars**

Three calendars shall be used:

- ☐ 7 day week for design and procurement
- ☐ 6 day workweek with Afghan public holidays for interior work
- ☐ 6 day workweek with Afghan public holidays and severe weather allowance for exterior work

#### **3.3.3c Network Logic**

The schedule must be logic driven. All activities must have at least one predecessor and one successor. Start-to-start and finish-to-finish may not be used unless the start or finish of an activity truly restrains the start or finish of the succeeding activity.

#### **3.3.3d External Constraints**

External constraint dates may not be used except for two milestones: NTP (start milestone, start-no-earlier-than) and Contract Complete (finish milestone, finish-no-later than).

#### **3.3.3e Reports**

Two report formats are required:

3. Activities grouped in a logical phases of work, sorted by early start and early finish
4. Activities grouped by bid item and phase with bid item and project totals

### **3.3.4 Cost**

Listed with each work item shall be a corresponding cost representing the total cost, such as material, labor, equipment, and overhead associated with that item. The total cost of the work items shall be equal to the Bid Price for that sub-line item of the Proposal Schedule.

### **3.3.5 Scheduled Project Completion**

The schedule interval shall extend from Notice-To-Proceed to the contract completion date.

### **3.3.6 Projected Earning Curve**

Submitted with the Construction Schedule shall be a Projected Earning Curve. The Projected Earning Curve is a plot of the Contractor's earnings on the vertical axis and the contract duration on the horizontal axis. The earnings figure shall relate to the complete value of the contract and need not reflect each facility separately.

### **3.3.7 Construction Schedule**

The Construction Schedule shall be on one page with a maximum dimension of 90 cm by 120 cm. The Contractor shall submit the Projected Earnings Curve on the same page. The initial submittal shall include one (1) reproducible and four (4) copies, one (1) copy of which will be returned to the Contractor when approved.

### **3.3.8 Submission With Partial Payment Estimate**

Each time the Contractor submits a payment request under this contract he shall also submit three (3) copies of the Bar Chart. The Bar Chart shall be annotated by indicating the percent complete for each activity directly on the bar. The Projected Earnings Curve shall be annotated by plotting actual earnings versus time on the same graph. Those work items reflecting performance which is behind schedule by fifteen (15) calendar days or more shall be fully explained in detail giving the reason for delay and the Contractor's plan for timely completion within the schedule.

### **3.3.9 Modifications**

The Construction Schedule and Projected Earning Curve shall be revised to reflect any and all modifications issued to this contract as they are issued. Format and numbers of copies as defined in paragraph CONSTRUCTION SCHEDULE shall be submitted for approval by the Contracting Officer.

## **3.4 PERIODIC PROGRESS MEETINGS**

Progress meetings to discuss payment shall include a monthly on-site meeting or shall be conducted at other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor shall describe, on an activity-by-activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

### **3.4.1 Update Submission Following Progress Meeting**

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than four (4) working days after the monthly progress meeting.

### **3.4.2 Progress Meeting Contents**

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost to Date, shall be subject to the approval of the Contracting Officer.

### **3.4.3 Earnings Report**

A compilation of the Contractor's Total Earnings on the project from the Notice-to-Proceed until the most recent Monthly Progress Meeting shall be recorded. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and the Contracting Officer at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. This report shall: sum all activities and provide a percent complete by individual activity and total project percent complete. The report shall contain, for each activity: activity identification, activity description, original budgeted amount, total quantity, quantity to date, percent complete (based on cost), and earnings to date.

### **3.4.4 Cost Completion**

The earnings for each activity started shall be reviewed. Payment shall be based on earnings for each in-progress or completed activity. Payment for individual activities shall not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

### **3.4.5 Network Analysis System**

The Contractor may, as an option, submit to the Contracting Officer for approval, a time related network analysis in lieu of the previously specified bar chart.

-- End of Section --

TASK ORDER CLAUSES  
TASK ORDER CLAUSES

The following clauses are applicable to the Sample Task Order (ANA SECURITY UPGRADES TO GARDEZ)

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within 7 Calendar days after the date the contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 300 Calendar days after notice to proceed. The time stated for completion shall include final cleanup of the premises.

(End of clause)

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of \$727.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)